TOET20" 989h0660

FIG. 1

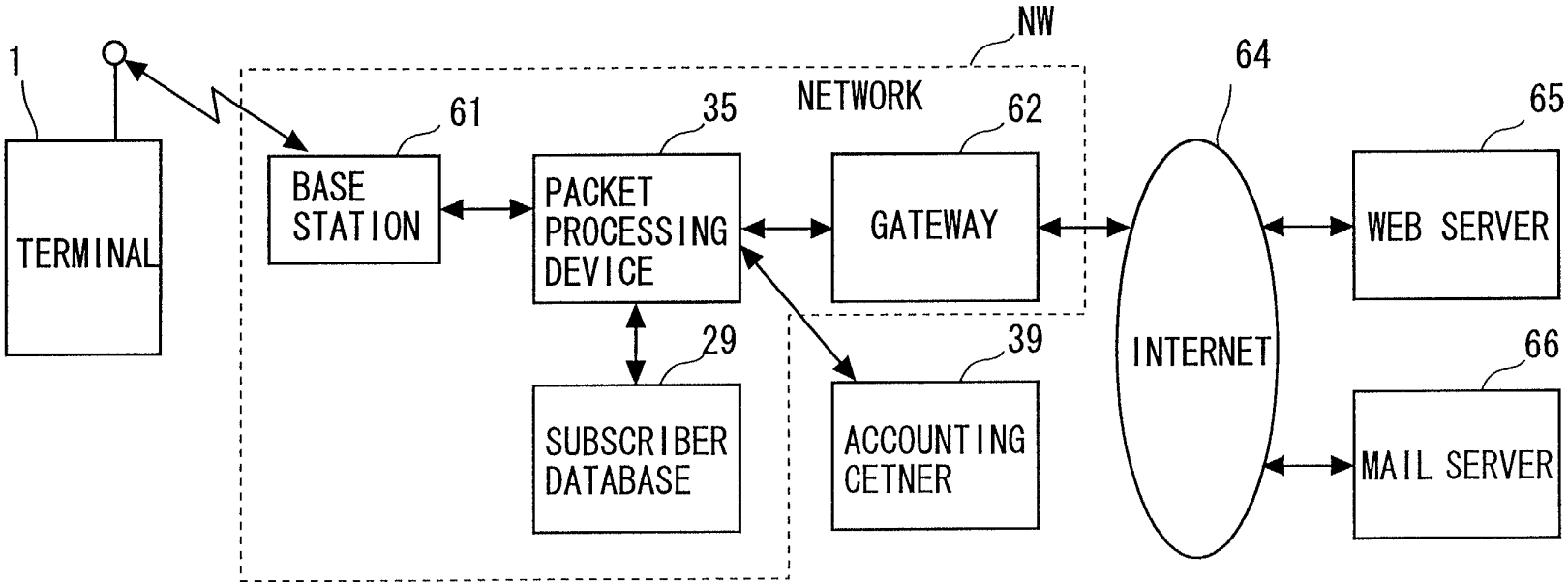

FIG. 2

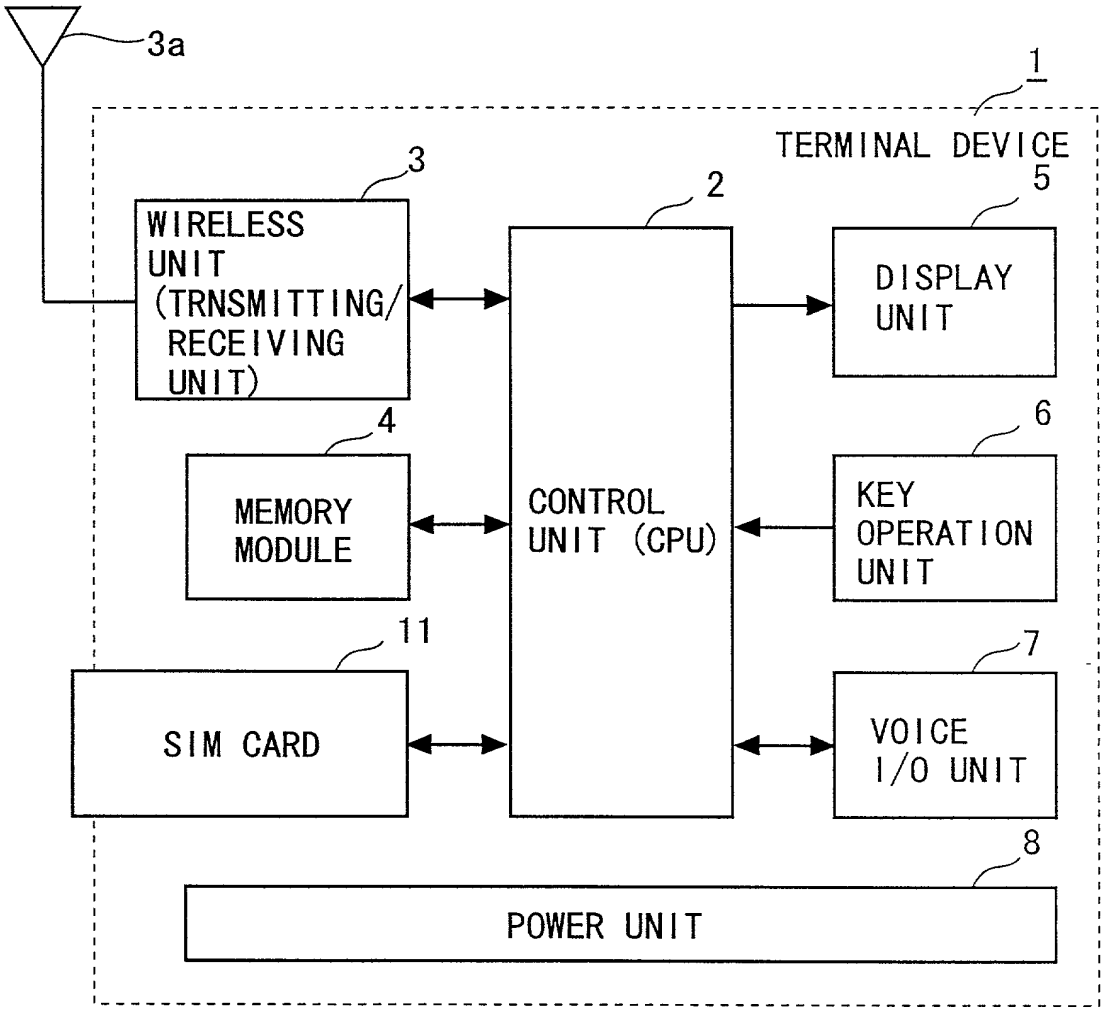
3a
1
TERMINAL DEVICE
3
WIRELESS UNIT (TRNSMITTING/ RECEIVING UNIT)
2
5
DISPLAY UNIT
4
MEMORY MODULE
CONTROL UNIT (CPU)
6
KEY OPERATION UNIT
11
SIM CARD
7
VOICE I/O UNIT
8
POWER UNIT

FIG. 3

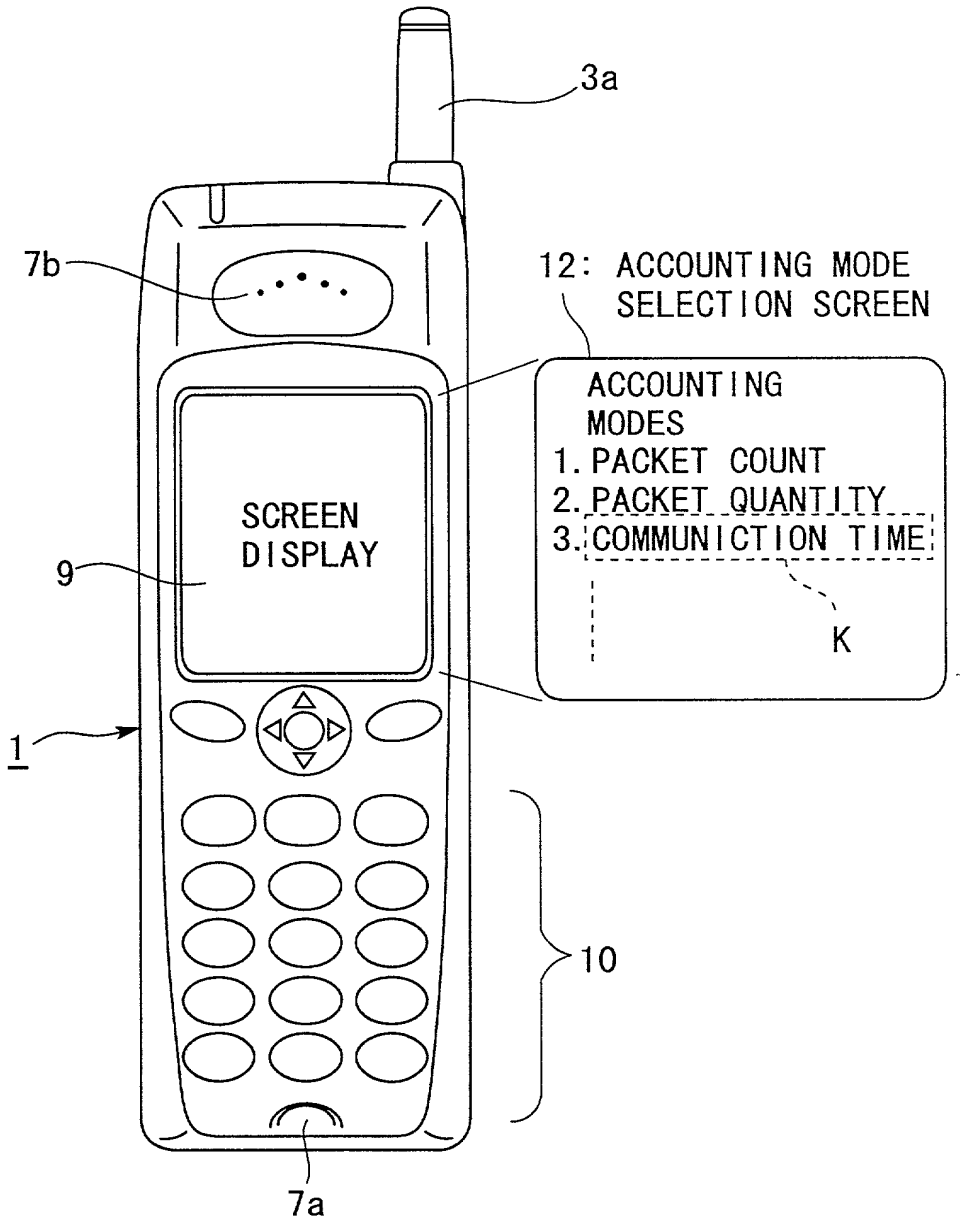
3a
7b
12: ACCOUNTING MODE SELECTION SCREEN
ACCOUNTING MODES
1. PACKET COUNT
2. PACKET QUANTITY
3. COMMUNICTION TIME
K
SCREEN DISPLAY
9
1
10
7a

FIG. 4

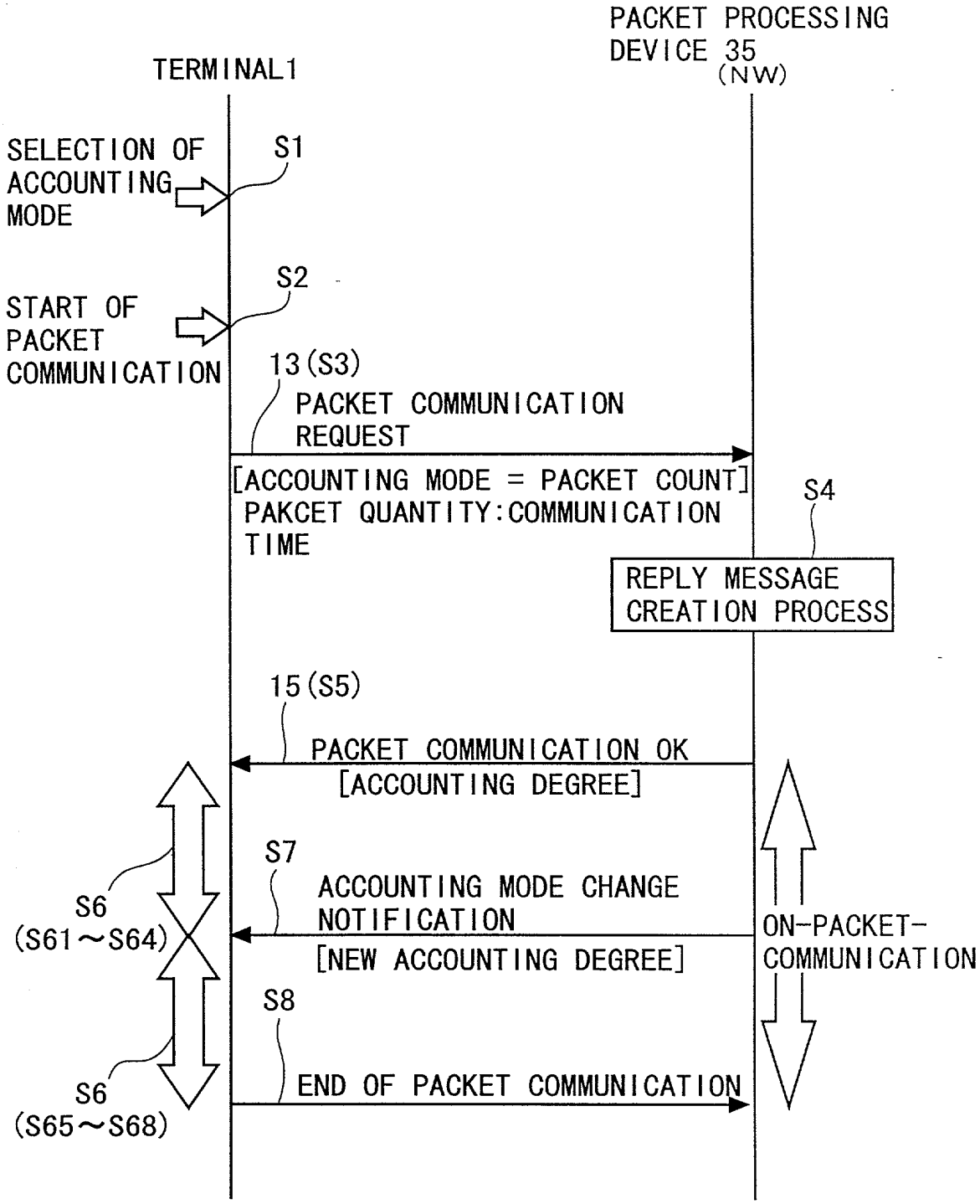
PACKET PROCESSING DEVICE 35 (NW)
TERMINAL1
SELECTION OF ACCOUNTING MODE
S1
START OF PACKET COMMUNICATION
S2
13(S3)
PACKET COMMUNICATION REQUEST
[ACCOUNTING MODE = PACKET COUNT]
PAKCET QUANTITY:COMMUNICATION TIME
S4
REPLY MESSAGE CREATION PROCESS
15(S5)
PACKET COMMUNICATION OK
[ACCOUNTING DEGREE]
S7
ACCOUNTING MODE CHANGE NOTIFICATION
[NEW ACCOUNTING DEGREE]
S6 (S61～S64)
S8
END OF PACKET COMMUNICATION
S6 (S65～S68)
ON-PACKET-COMMUNICATION

FIG. 5

MESSAGE FOR REQUESTING PACKET COMMUNICATION

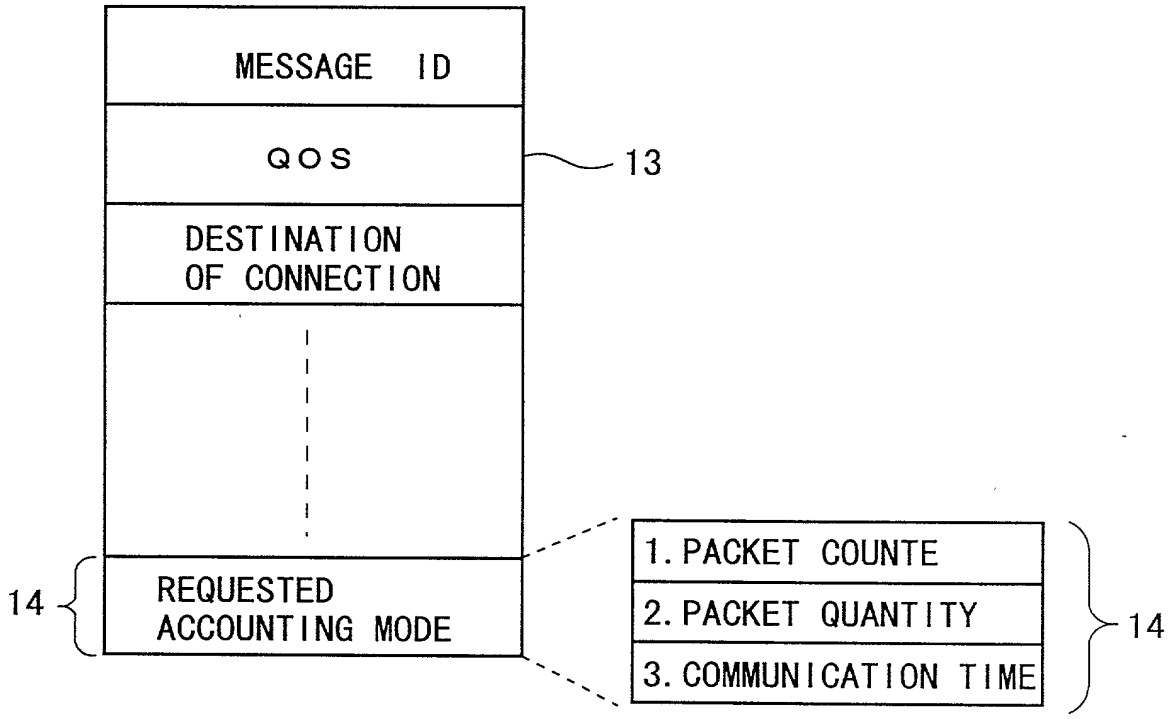

FIG. 6

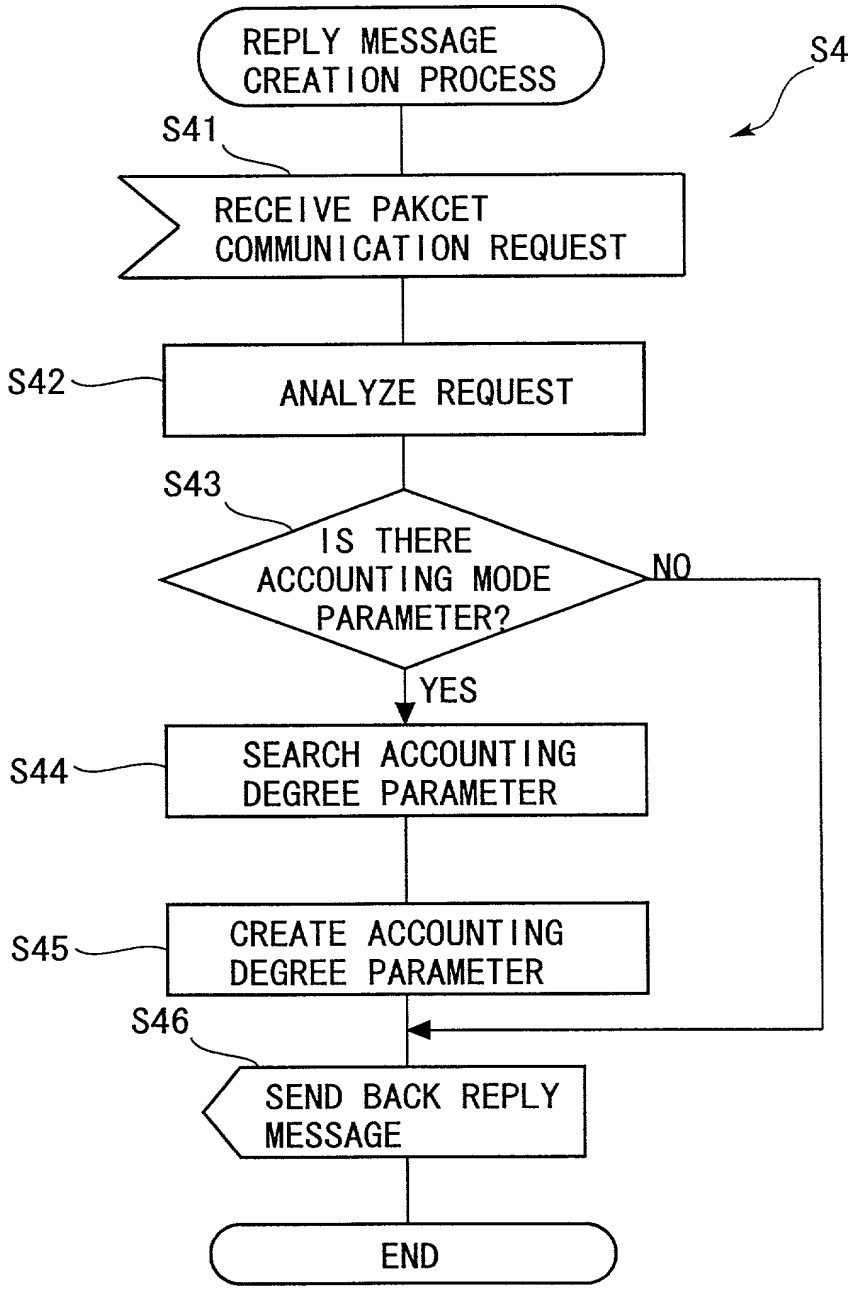
REPLY MESSAGE CREATION PROCESS
S4
S41
RECEIVE PAKCET COMMUNICATION REQUEST
S42
ANALYZE REQUEST
S43
IS THERE ACCOUNTING MODE PARAMETER?
NO
YES
S44
SEARCH ACCOUNTING DEGREE PARAMETER
S45
CREATE ACCOUNTING DEGREE PARAMETER
S46
SEND BACK REPLY MESSAGE
END

FIG. 7

PACKET COMMUNICATION O.K. MESSAGE
(RESPONSE MESSAGE)

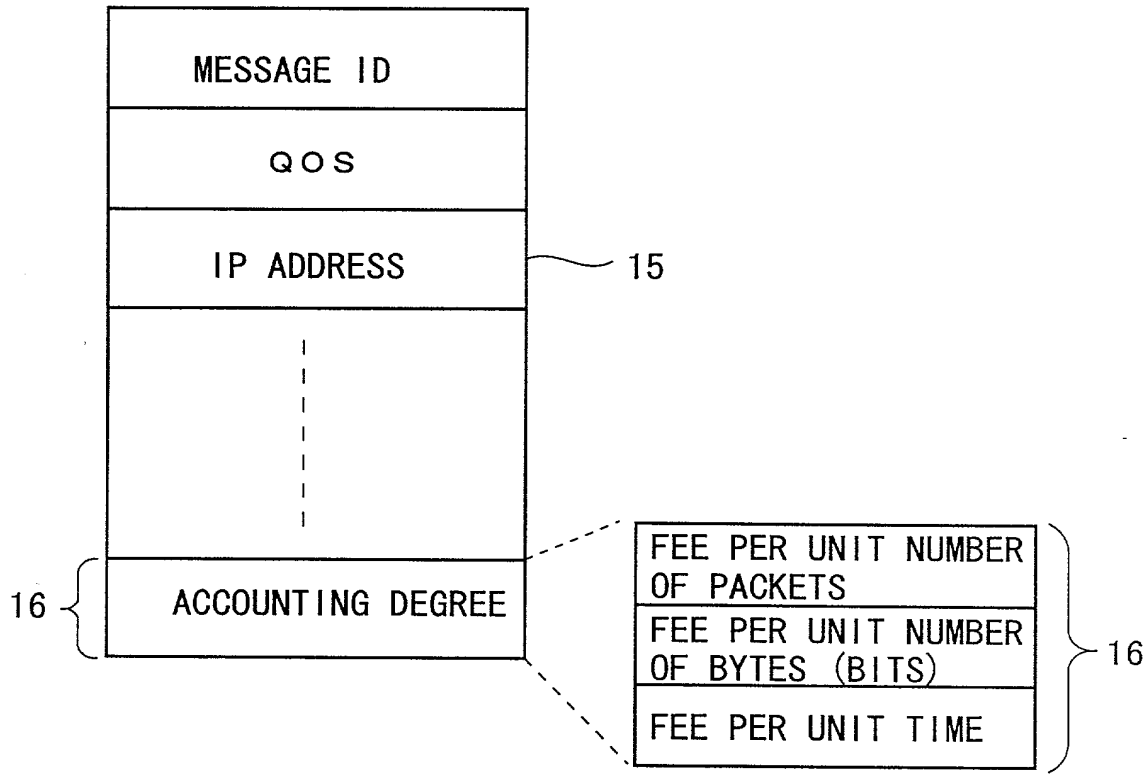

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FIG. 8

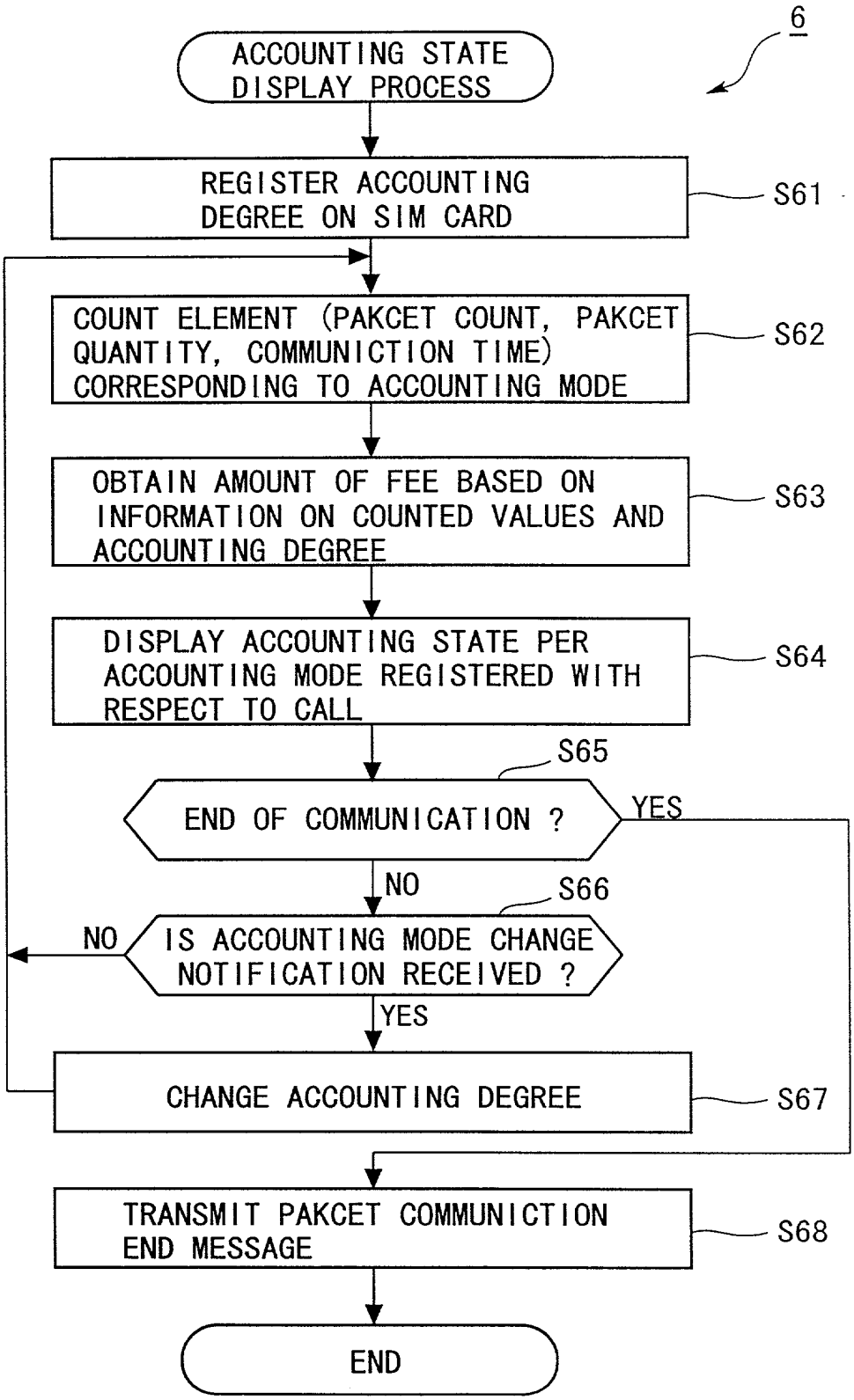
6
ACCOUNTING STATE DISPLAY PROCESS
REGISTER ACCOUNTING DEGREE ON SIM CARD
S61
COUNT ELEMENT (PAKCET COUNT, PAKCET QUANTITY, COMMUNICTION TIME) CORRESPONDING TO ACCOUNTING MODE
S62
OBTAIN AMOUNT OF FEE BASED ON INFORMATION ON COUNTED VALUES AND ACCOUNTING DEGREE
S63
DISPLAY ACCOUNTING STATE PER ACCOUNTING MODE REGISTERED WITH RESPECT TO CALL
S64
S65
END OF COMMUNICATION ?
YES
NO
S66
NO
IS ACCOUNTING MODE CHANGE NOTIFICATION RECEIVED ?
YES
CHANGE ACCOUNTING DEGREE
S67
TRANSMIT PAKCET COMMUNICTION END MESSAGE
S68
END

FIG. 9

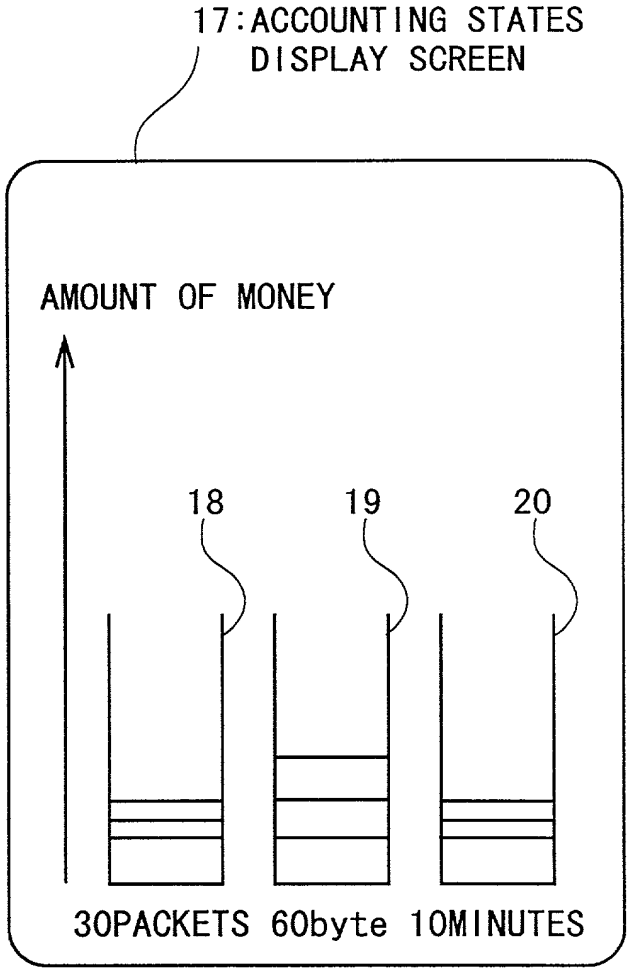
17:ACCOUNTING STATES
DISPLAY SCREEN
AMOUNT OF MONEY
18
19
20
30PACKETS 60byte 10MINUTES

FIG. 10

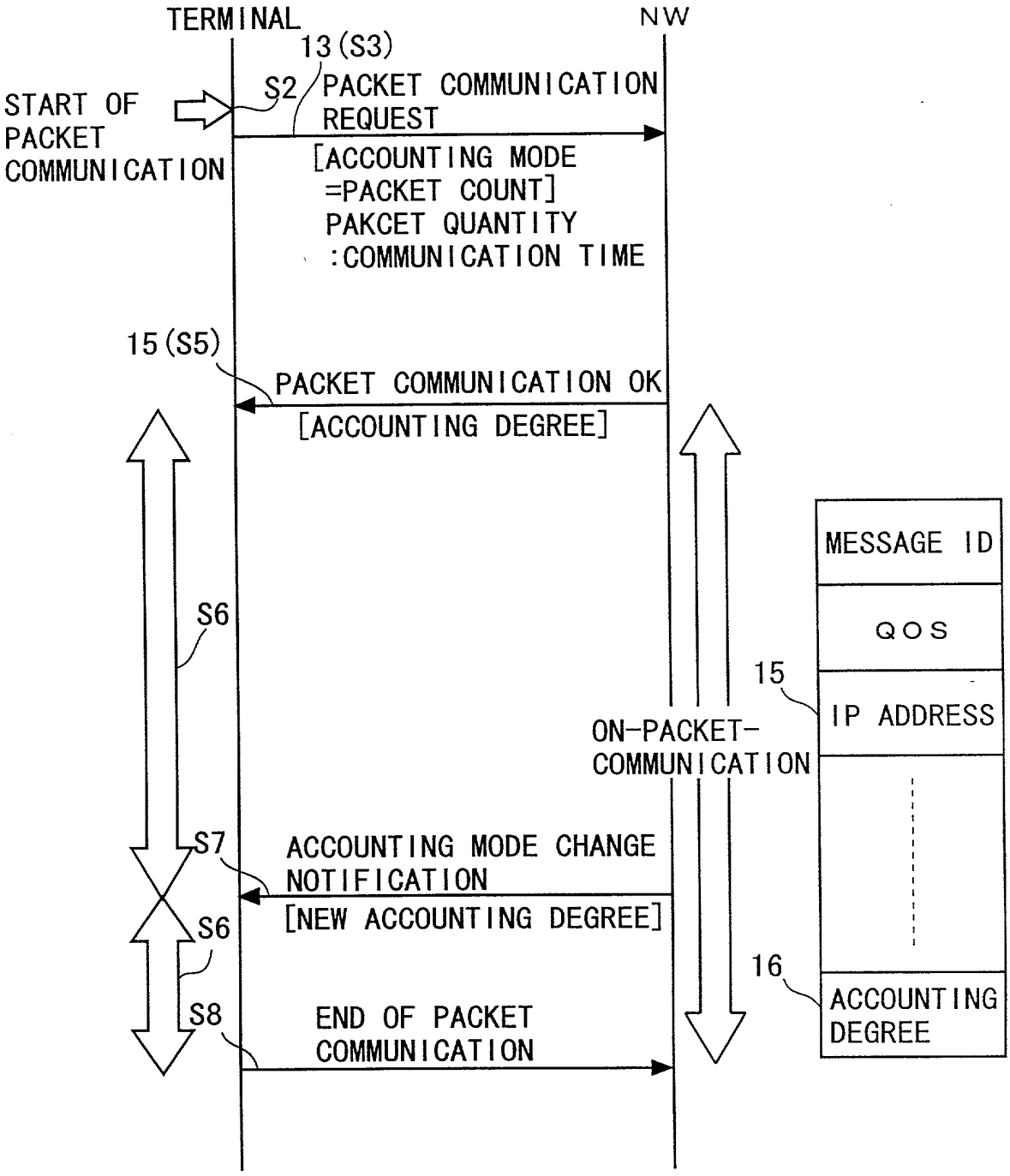
TERMINAL
NW
13 (S3)
S2
PACKET COMMUNICATION REQUEST
START OF PACKET COMMUNICATION
[ACCOUNTING MODE =PACKET COUNT]
PAKCET QUANTITY :COMMUNICATION TIME
15 (S5)
PACKET COMMUNICATION OK
[ACCOUNTING DEGREE]
S6
S7
ACCOUNTING MODE CHANGE NOTIFICATION
[NEW ACCOUNTING DEGREE]
S6
S8
END OF PACKET COMMUNICATION
ON-PACKET-COMMUNICATION
MESSAGE ID
QOS
15
IP ADDRESS
16
ACCOUNTING DEGREE

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FIG. 11A

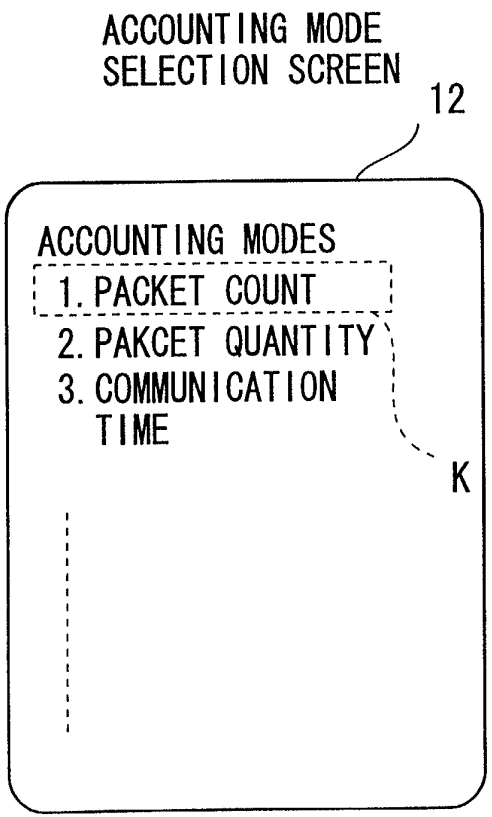

FIG. 11B

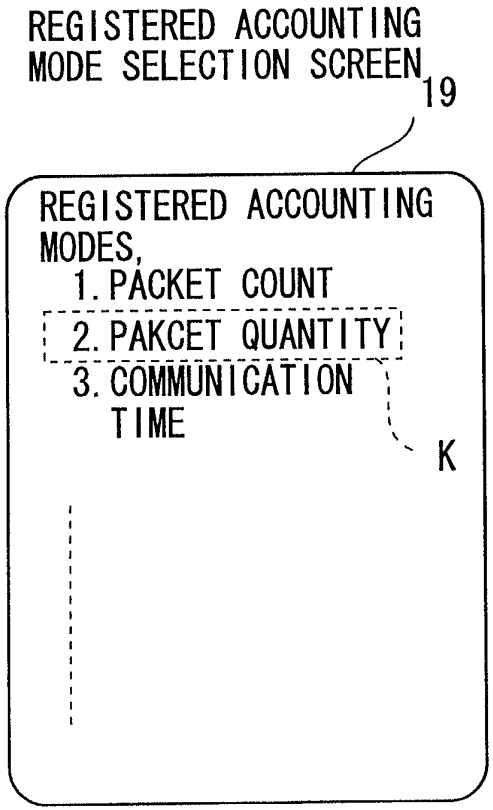

FIG. 11C

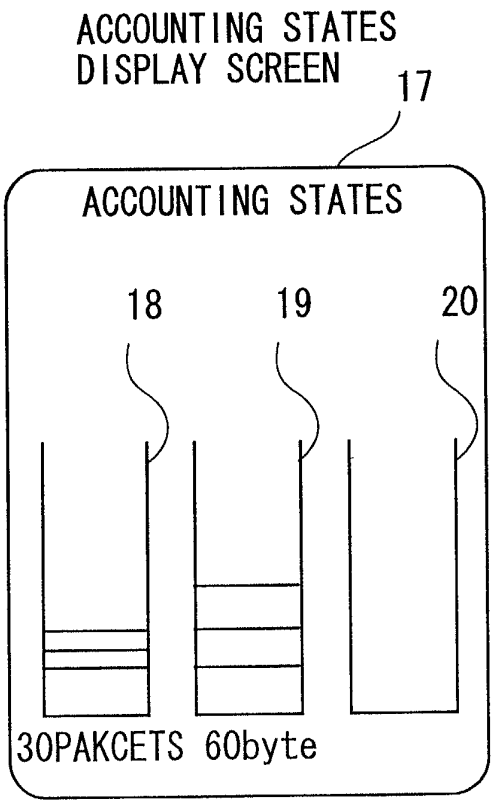

FIG. 12

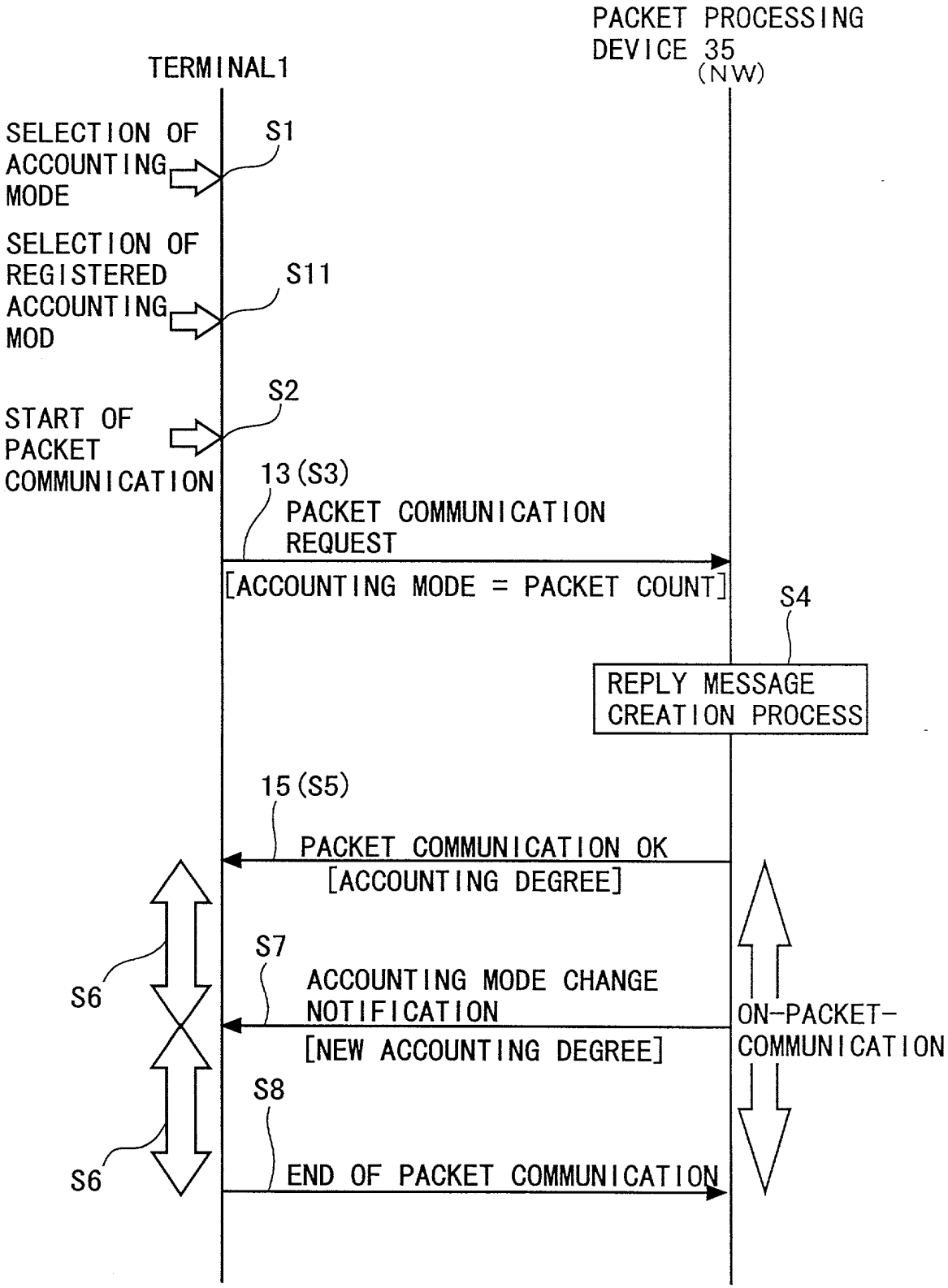
TERMINAL1
PACKET PROCESSING DEVICE 35 (NW)
SELECTION OF ACCOUNTING MODE
S1
SELECTION OF REGISTERED ACCOUNTING MOD
S11
START OF PACKET COMMUNICATION
S2
13 (S3)
PACKET COMMUNICATION REQUEST
[ACCOUNTING MODE = PACKET COUNT]
S4
REPLY MESSAGE CREATION PROCESS
15 (S5)
PACKET COMMUNICATION OK
[ACCOUNTING DEGREE]
S6
S7
ACCOUNTING MODE CHANGE NOTIFICATION
[NEW ACCOUNTING DEGREE]
ON-PACKET-COMMUNICATION
S8
S6
END OF PACKET COMMUNICATION

FIG. 13

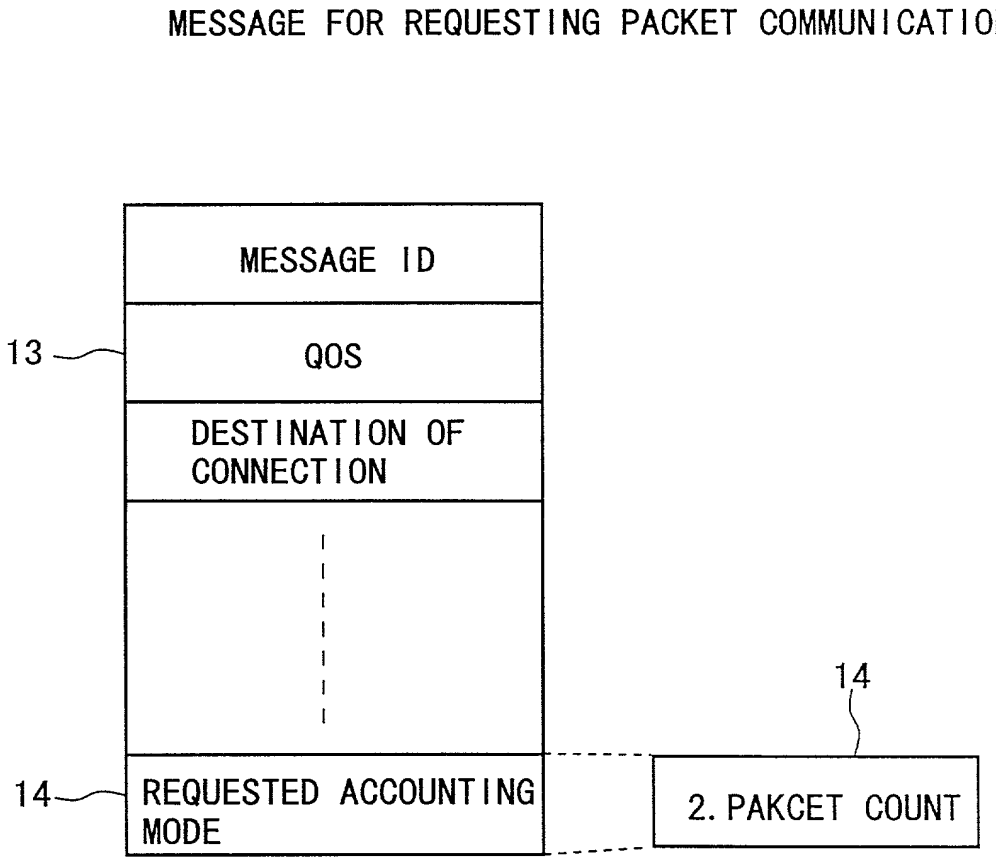
MESSAGE FOR REQUESTING PACKET COMMUNICATION
MESSAGE ID
13
QOS
DESTINATION OF CONNECTION
14
14
REQUESTED ACCOUNTING MODE
2. PAKCET COUNT

FIG. 14

PACKET COMMUNICATION O.K. MESSAGE

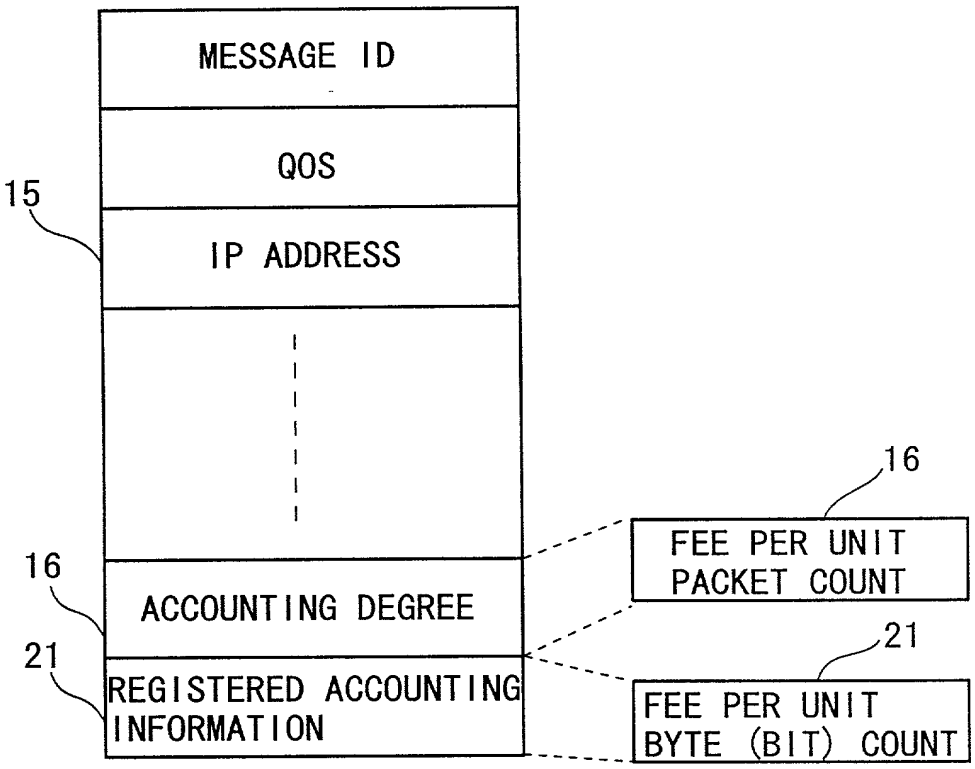

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FIG. 15A

ACCOUNTING MODE
SELECTION SCREEN

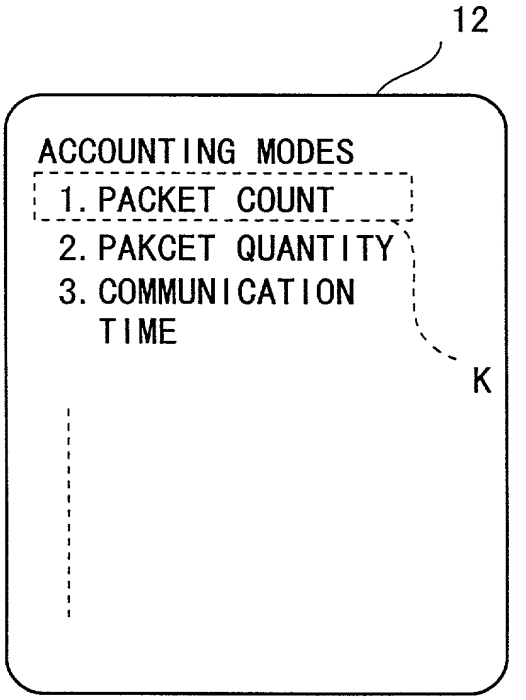

FIG. 15B

ACCOUNTING MODE
SELECTION SCREEN

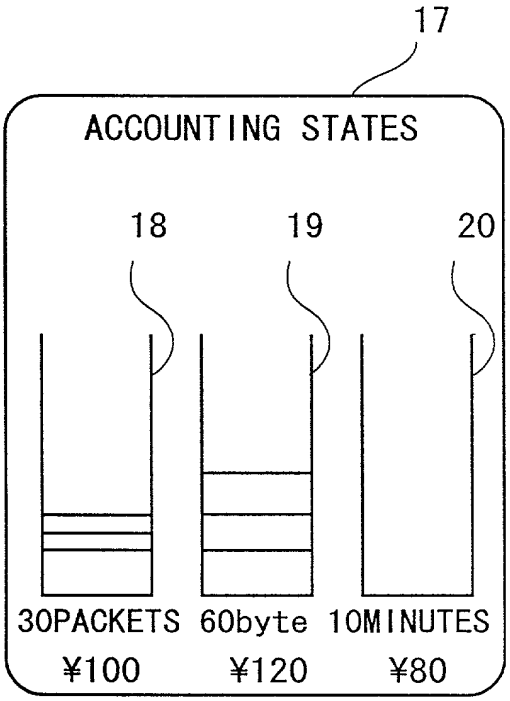

FIG. 16A

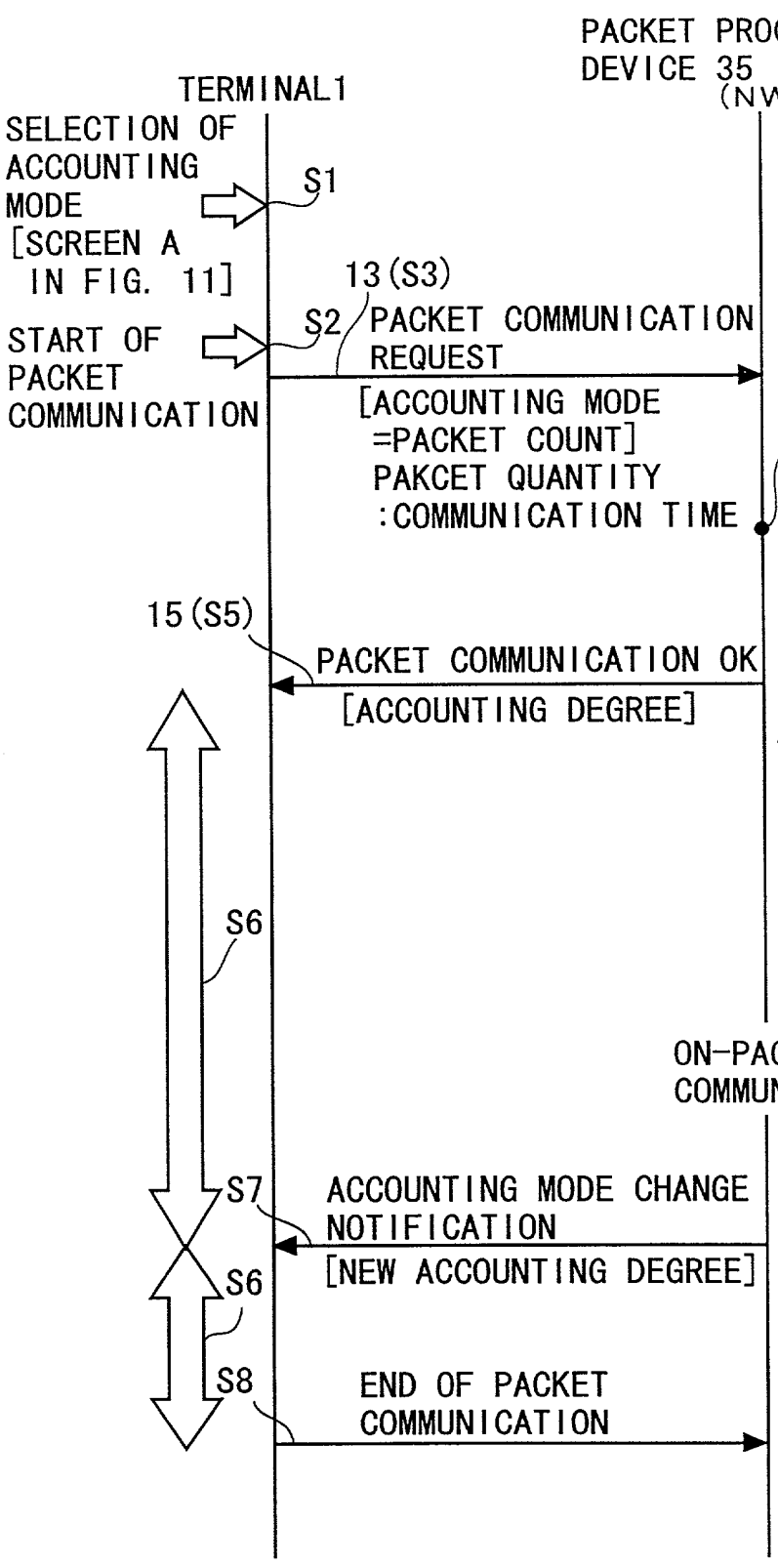

FIG. 16B

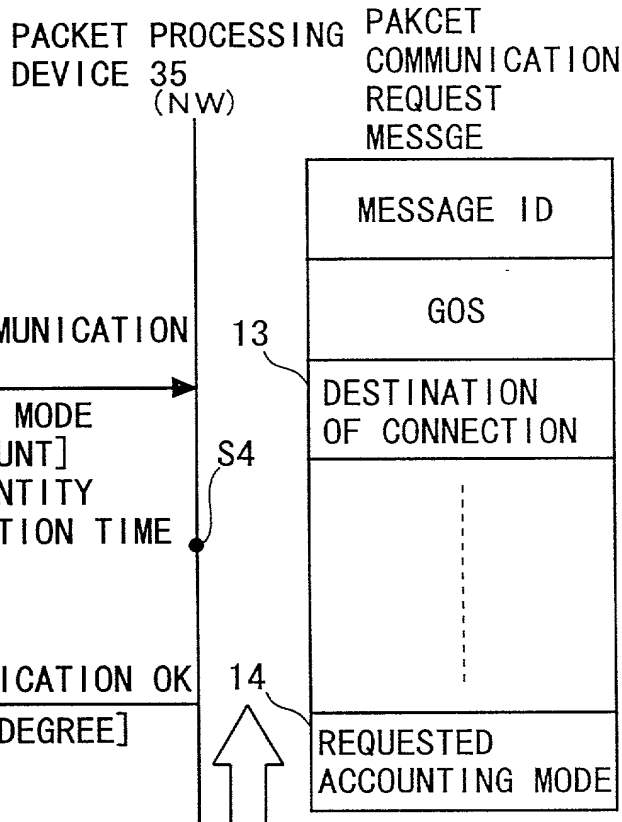

FIG. 16C

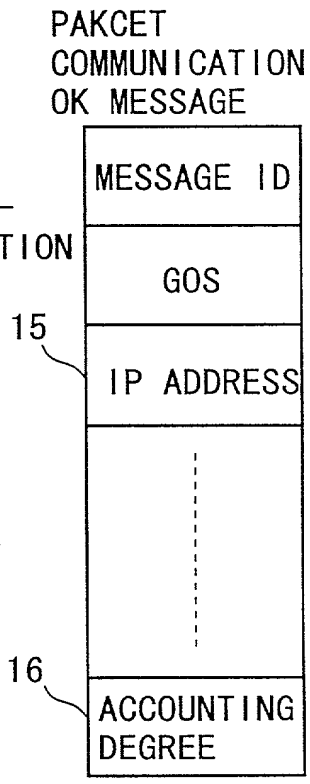

FIG. 17A

ACCOUNTING MODE SELECTION SCREEN

FIG. 17B

ALARM NOTIFICATION SETTING SCREEN

FIG. 17C

THRESHOLD VALUE INPUT SCREEN

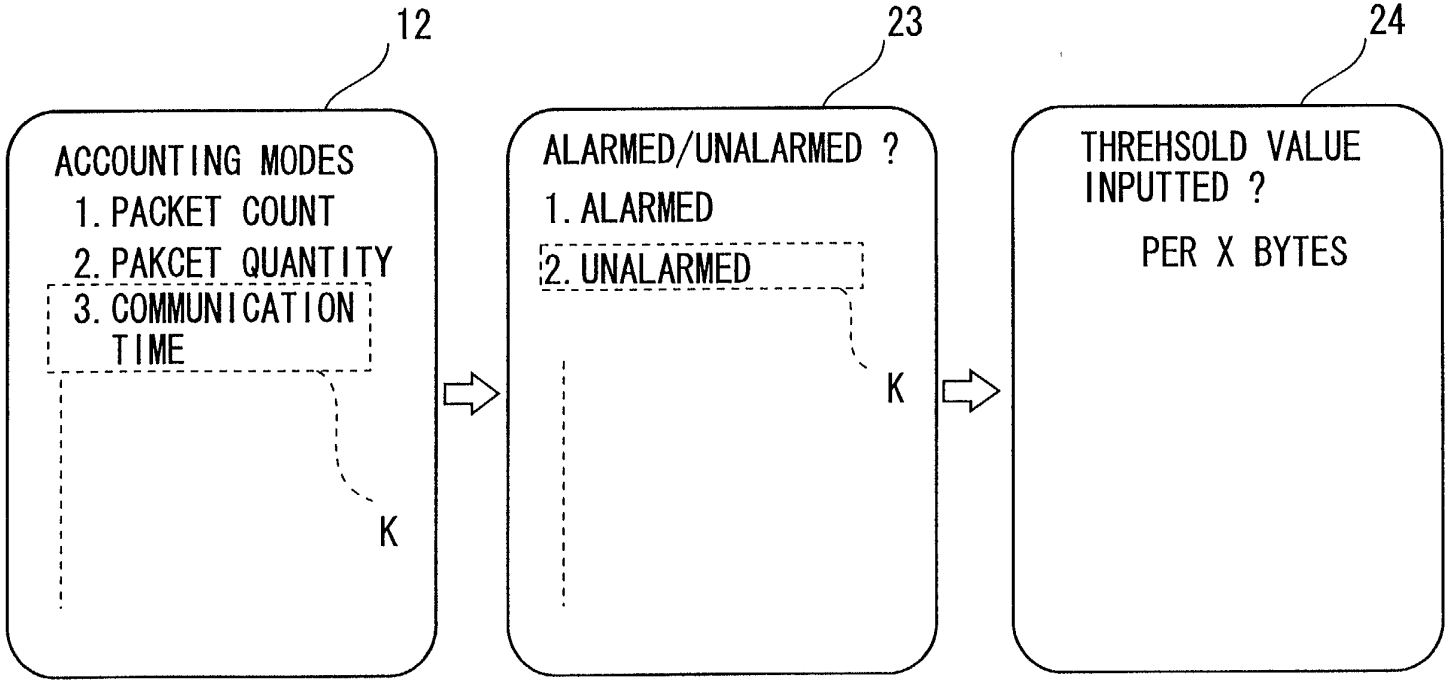

FIG. 18

DISC/REL MESSAGE

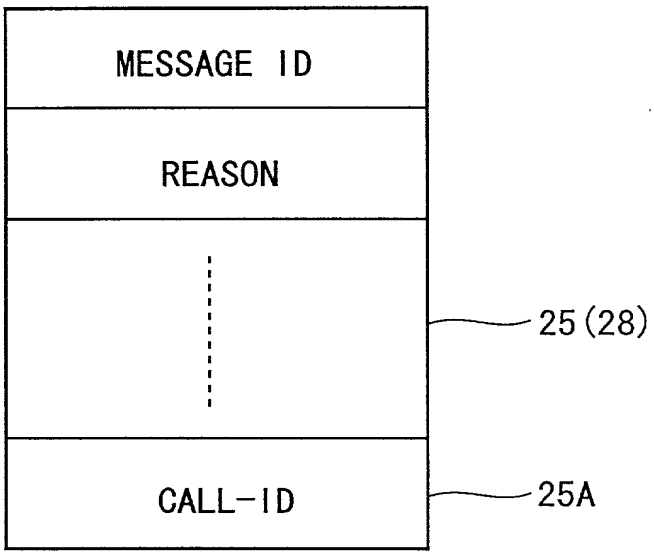

FIG. 19

ACCCOUNTING METHOD SETTING EMSSAGE

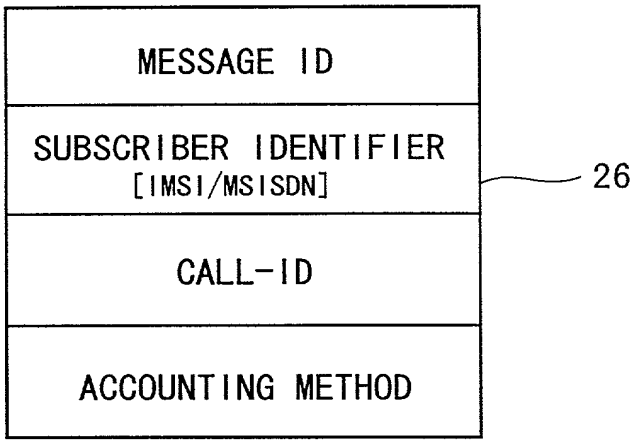

FIG. 20

ACCOUNTING METHOD SELECTION SCREEN

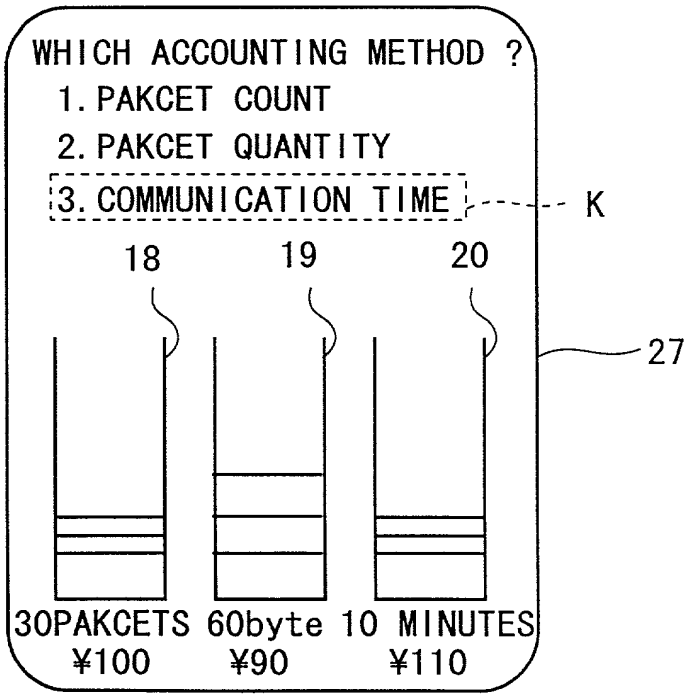

FIG. 21A

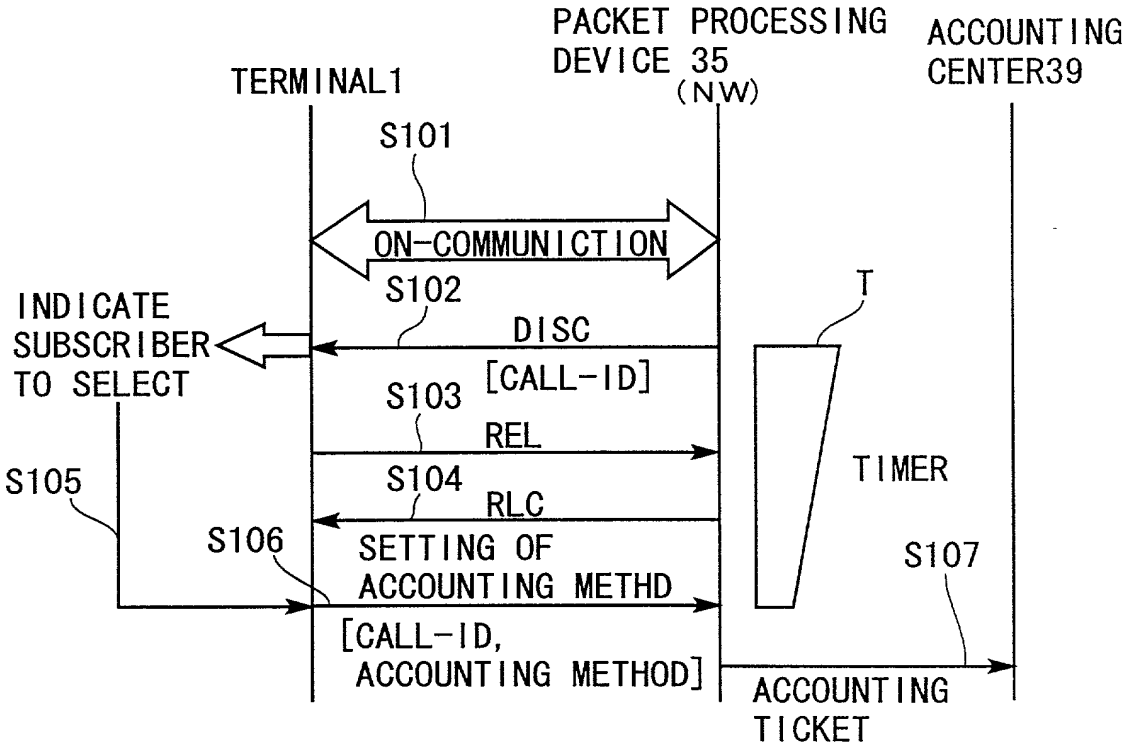

FIG. 21B

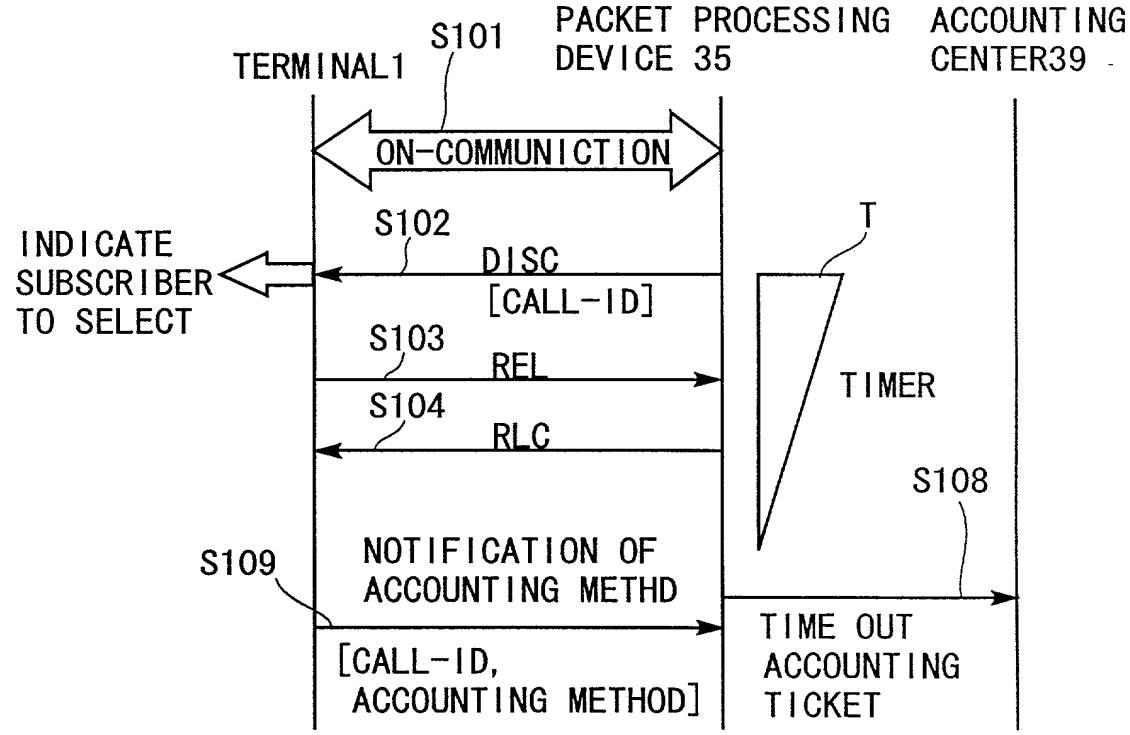

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FIG. 22

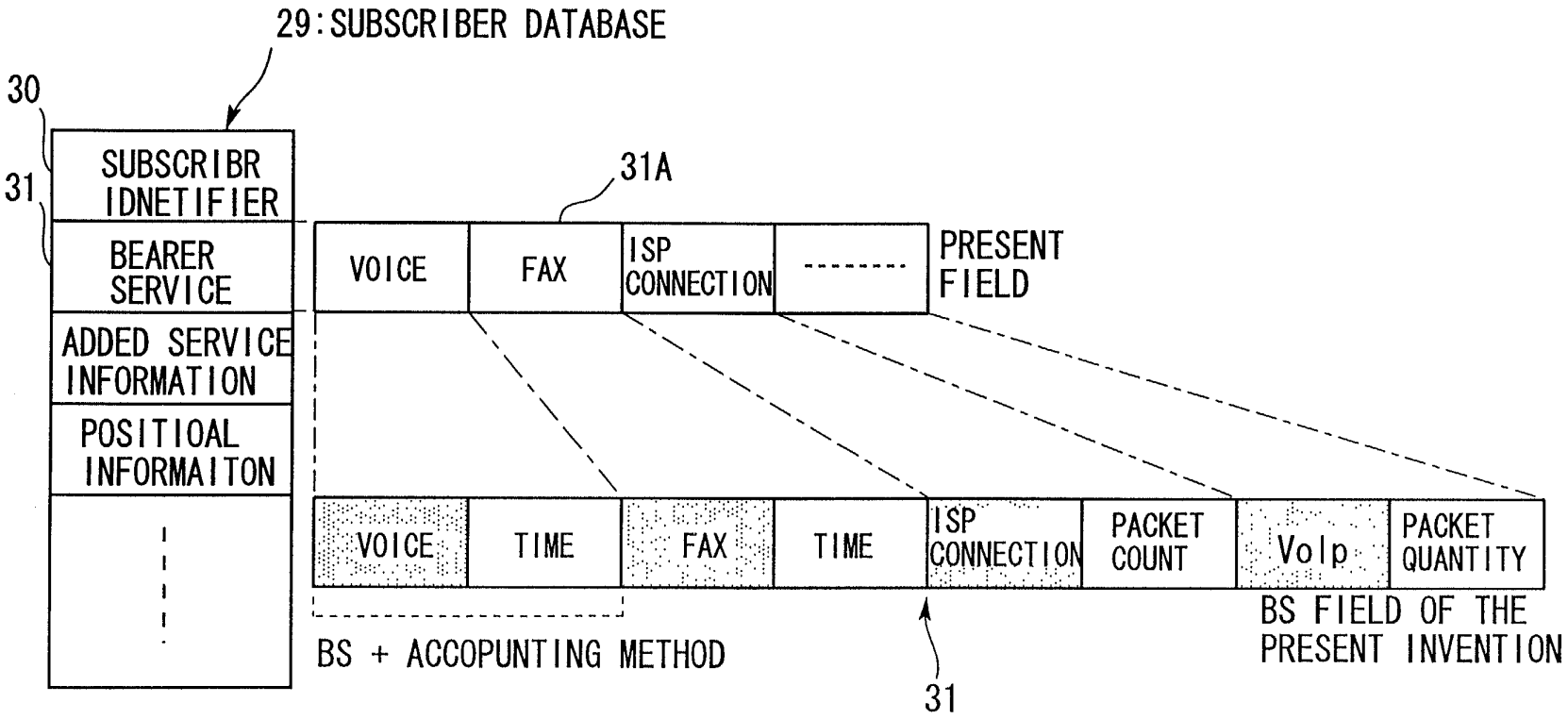

FIG. 23

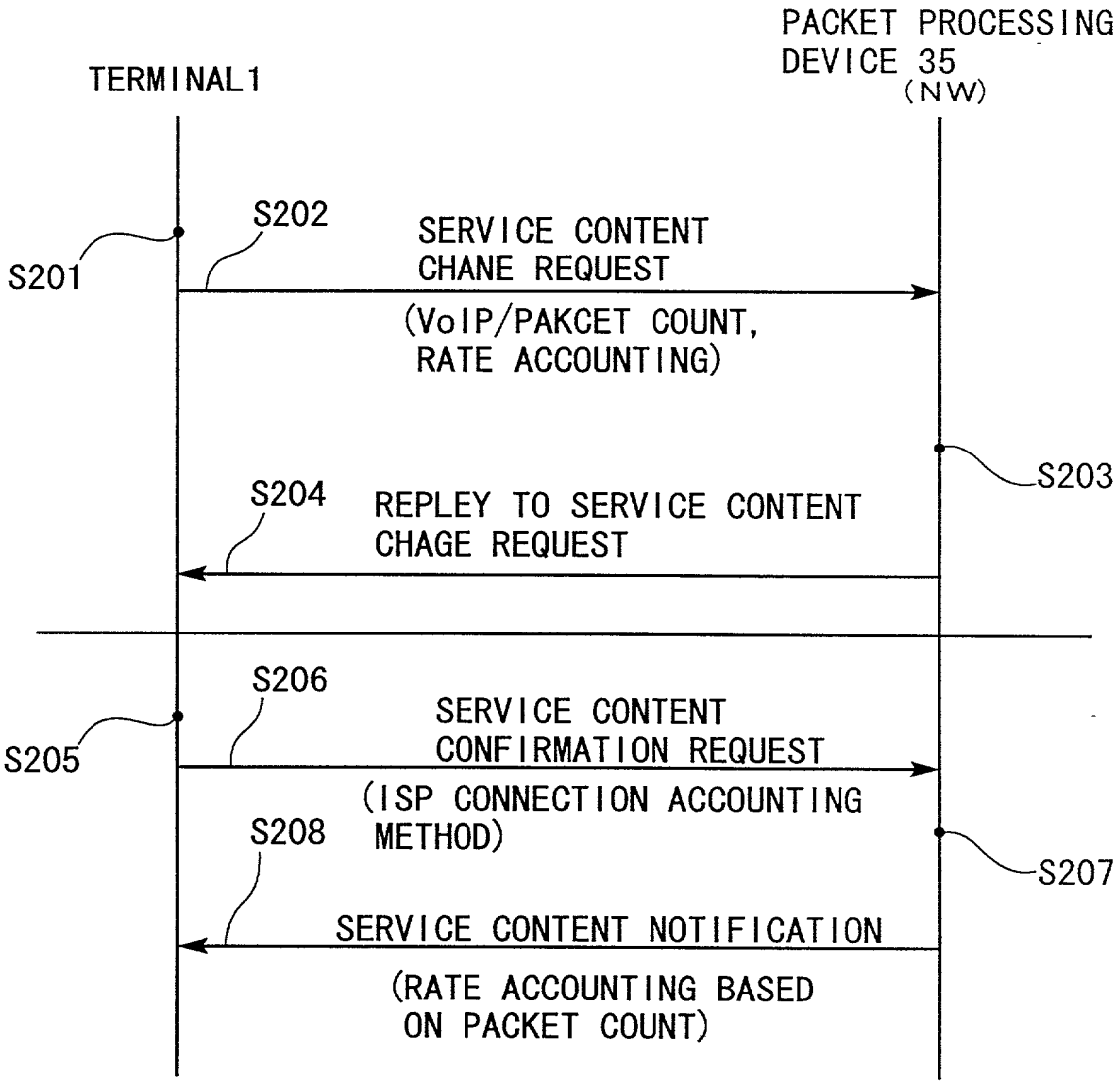
TERMINAL1
PACKET PROCESSING DEVICE 35 (NW)
S201
S202
SERVICE CONTENT CHANE REQUEST
(VoIP/PAKCET COUNT, RATE ACCOUNTING)
S203
S204
REPLEY TO SERVICE CONTENT CHAGE REQUEST
S205
S206
SERVICE CONTENT CONFIRMATION REQUEST
(ISP CONNECTION ACCOUNTING METHOD)
S207
S208
SERVICE CONTENT NOTIFICATION
(RATE ACCOUNTING BASED ON PACKET COUNT)

FIG. 24

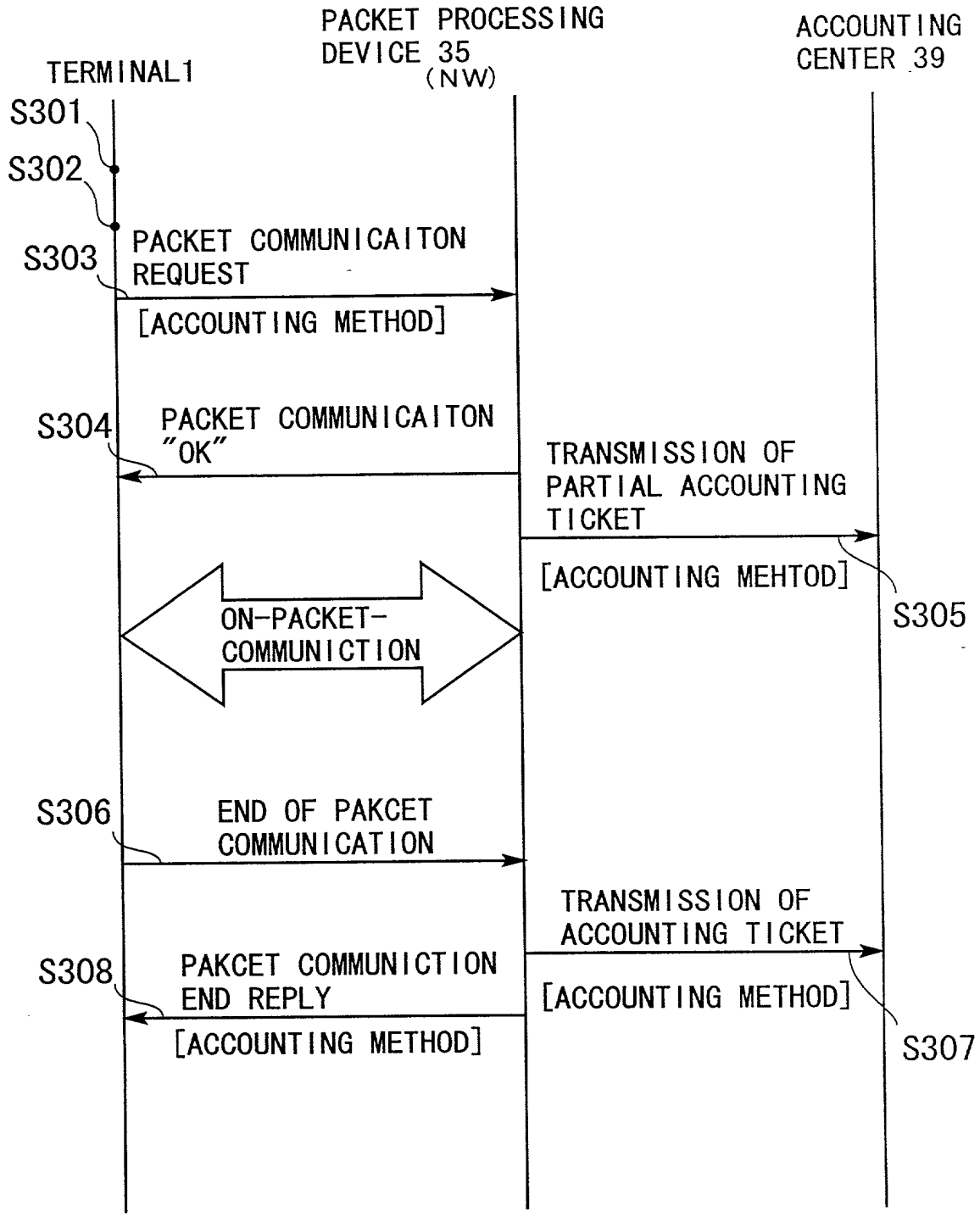

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FIG. 25A

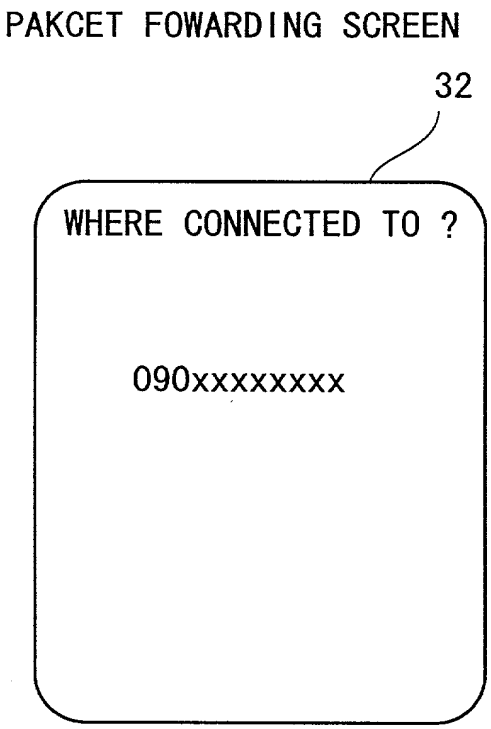

FIG. 25B

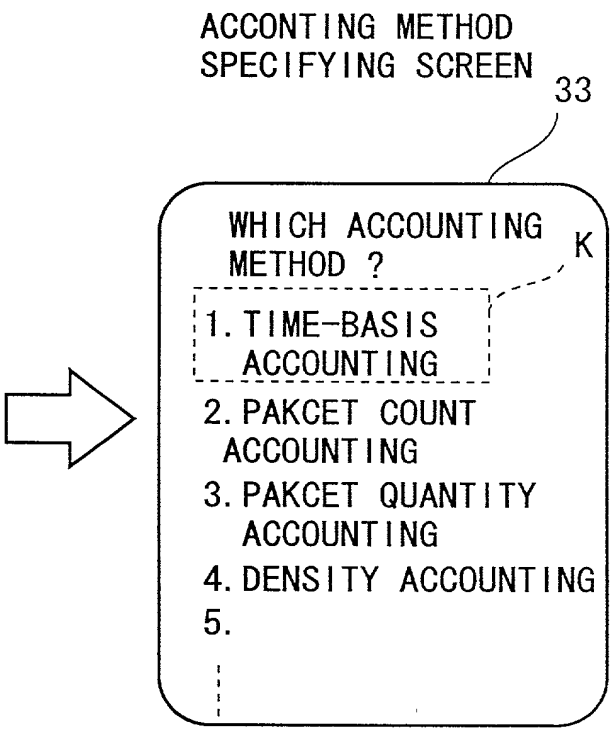

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FIG. 26

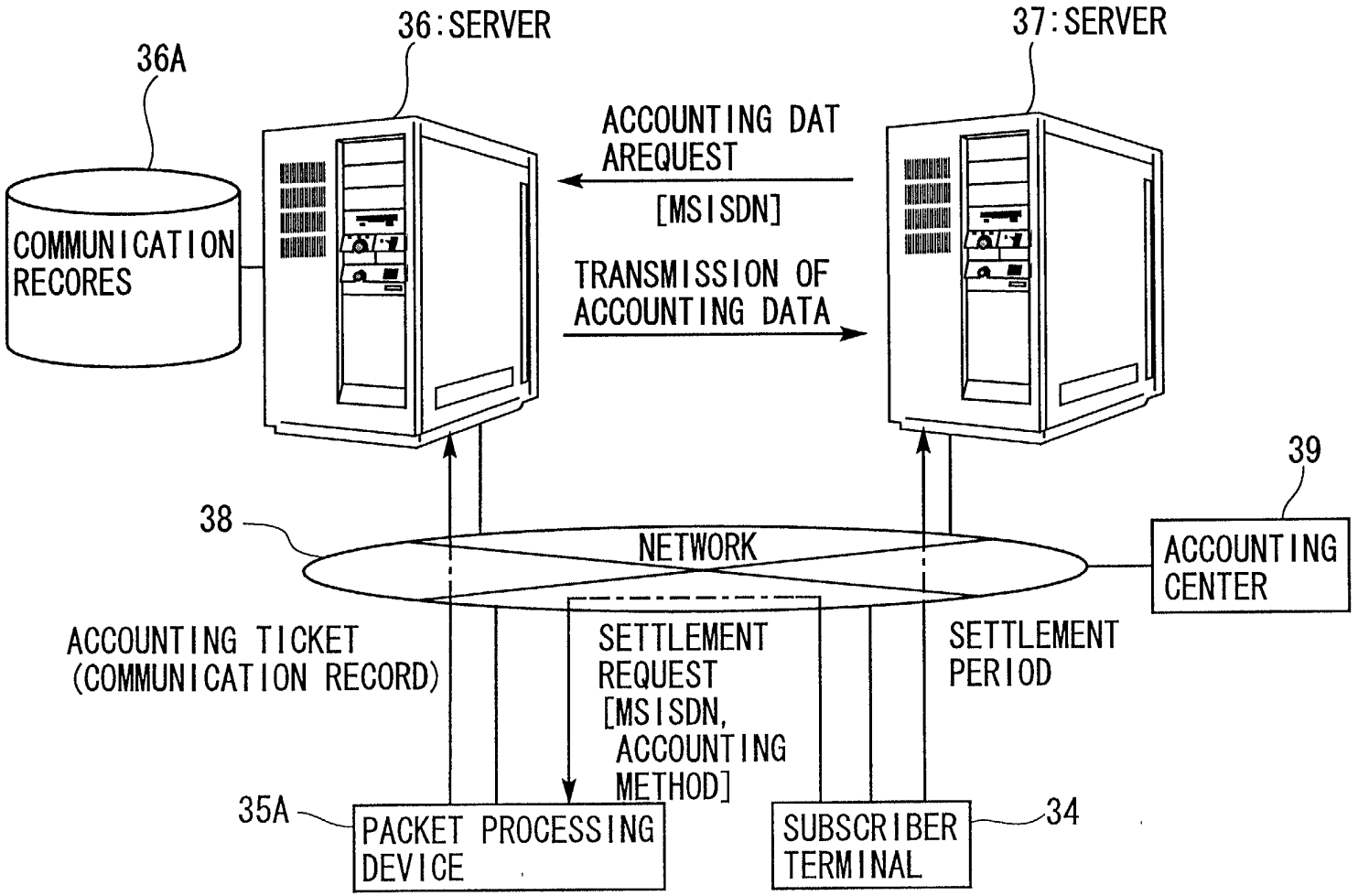

FIG. 27

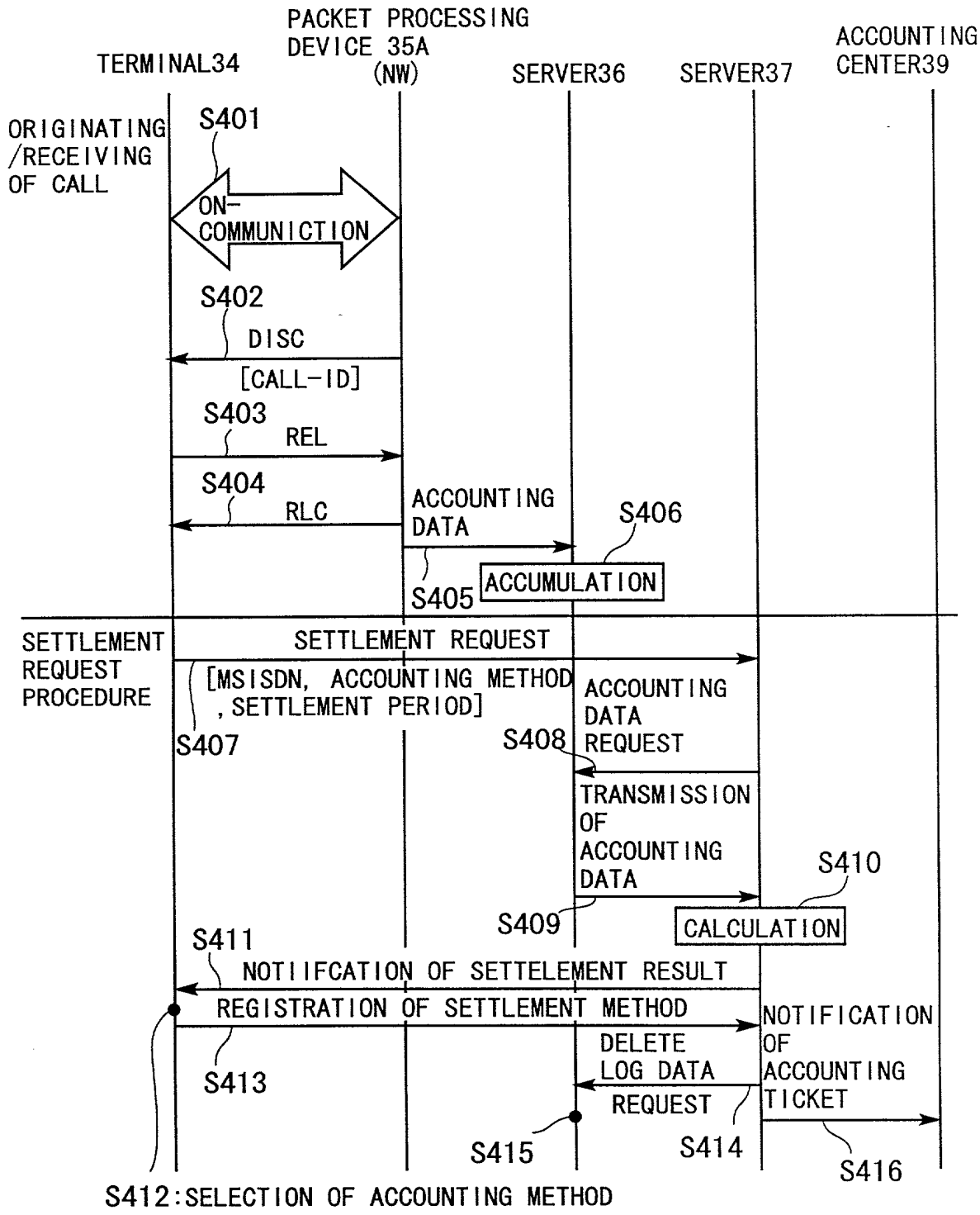
TERMINAL34
PACKET PROCESSING DEVICE 35A (NW)
SERVER36
SERVER37
ACCOUNTING CENTER39
ORIGINATING /RECEIVING OF CALL
S401
ON-COMMUNICTION
S402
DISC
[CALL-ID]
S403
REL
S404
RLC
ACCOUNTING DATA
S405
S406
ACCUMULATION
SETTLEMENT REQUEST PROCEDURE
SETTLEMENT REQUEST
[MSISDN, ACCOUNTING METHOD, SETTLEMENT PERIOD]
S407
S408
ACCOUNTING DATA REQUEST
TRANSMISSION OF ACCOUNTING DATA
S409
S410
CALCULATION
S411
NOTIIFCATION OF SETTELEMENT RESULT
REGISTRATION OF SETTLEMENT METHOD
S413
DELETE LOG DATA REQUEST
S414
S415
NOTIFICATION OF ACCOUNTING TICKET
S416
S412:SELECTION OF ACCOUNTING METHOD

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FIG. 28

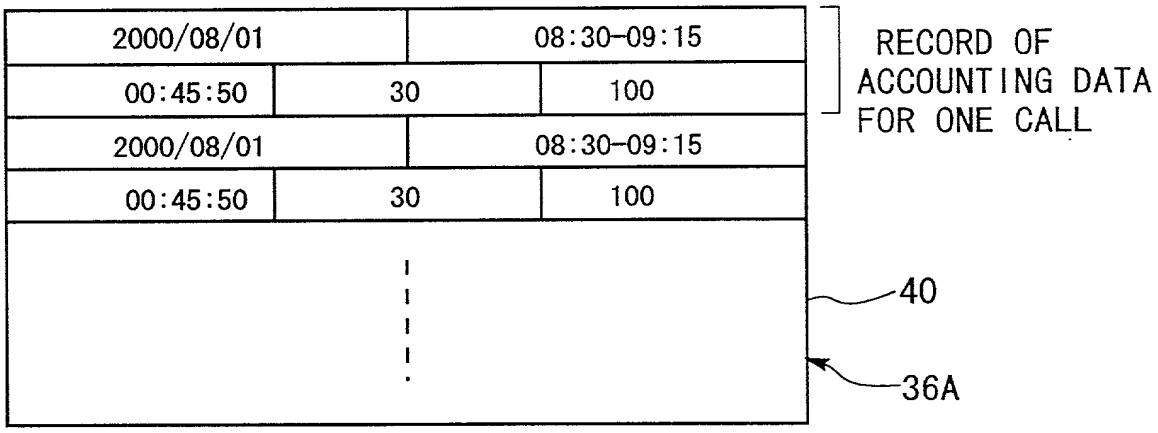

FIG. 29

RESULT-OF-SETTLEMENT SCREEN

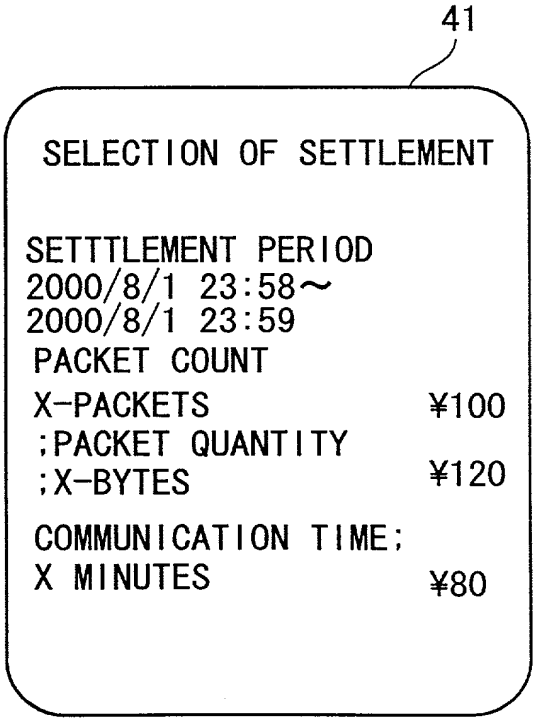

FIG. 30

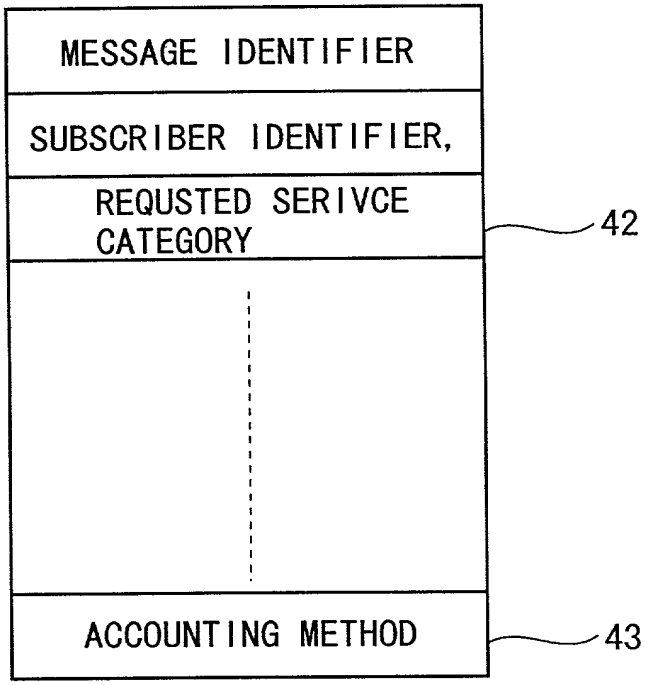
MESSAGE IDENTIFIER
SUBSCRIBER IDENTIFIER,
REQUSTED SERIVCE CATEGORY
42
ACCOUNTING METHOD
43

FIG. 31

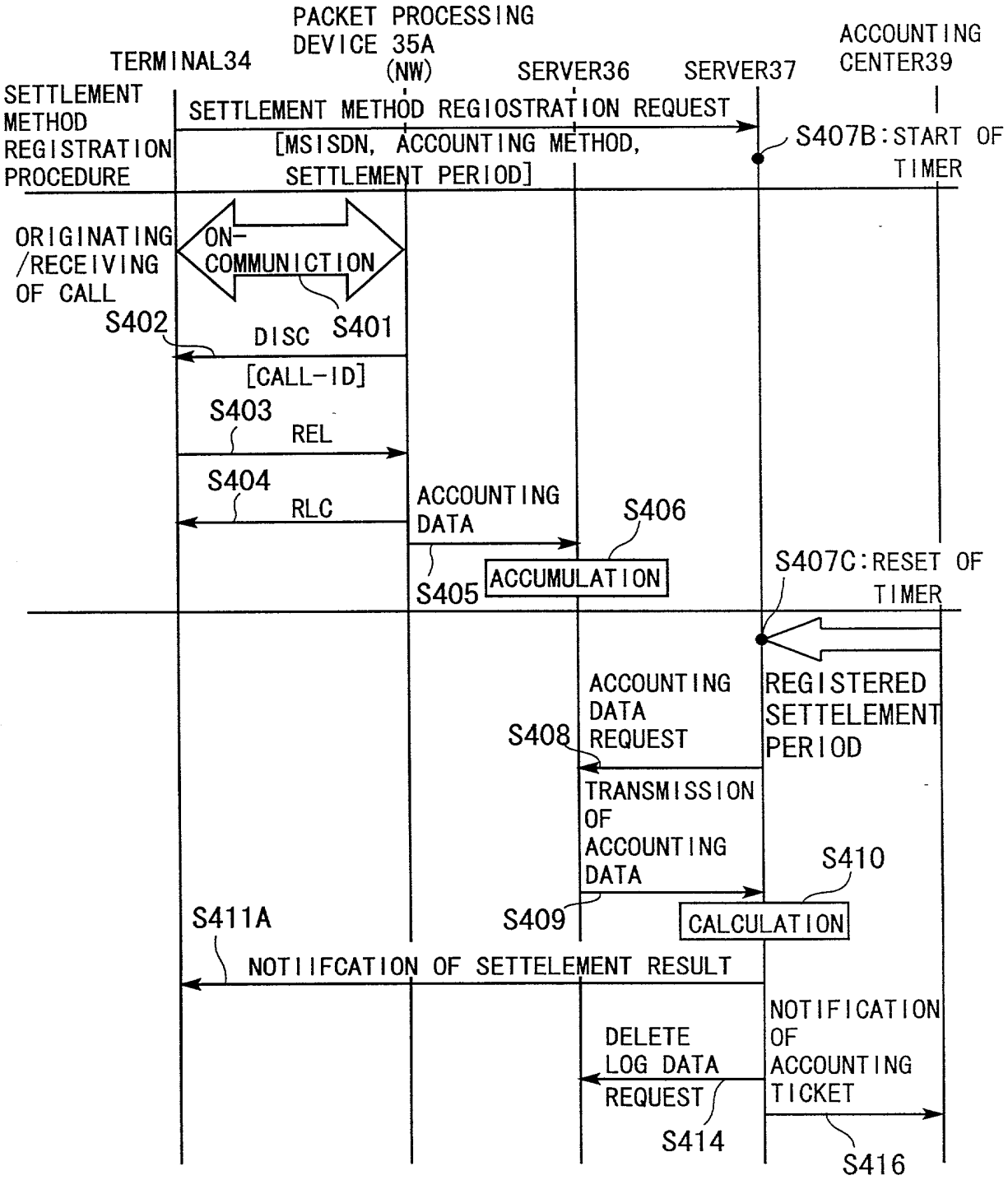
TERMINAL34
PACKET PROCESSING DEVICE 35A (NW)
SERVER36
SERVER37
ACCOUNTING CENTER39
SETTLEMENT METHOD REGISTRATION PROCEDURE
SETTLEMENT METHOD REGIOSTRATION REQUEST
[MSISDN, ACCOUNTING METHOD, SETTLEMENT PERIOD]
S407B:START OF TIMER
ORIGINATING /RECEIVING OF CALL
ON-COMMUNICTION
S401
S402
DISC
[CALL-ID]
S403
REL
S404
RLC
ACCOUNTING DATA
S405
S406
ACCUMULATION
S407C:RESET OF TIMER
ACCOUNTING DATA REQUEST
S408
REGISTERED SETTELEMENT PERIOD
TRANSMISSION OF ACCOUNTING DATA
S409
S410
CALCULATION
S411A
NOTIIFCATION OF SETTELEMENT RESULT
DELETE LOG DATA REQUEST
S414
NOTIFICATION OF ACCOUNTING TICKET
S416

FIG. 32

ACCOUNTING DATA DISPLAY SCREEN

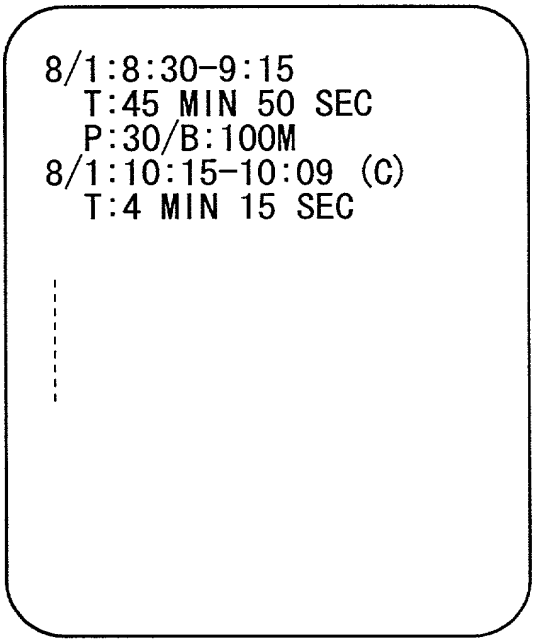

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FIG. 33

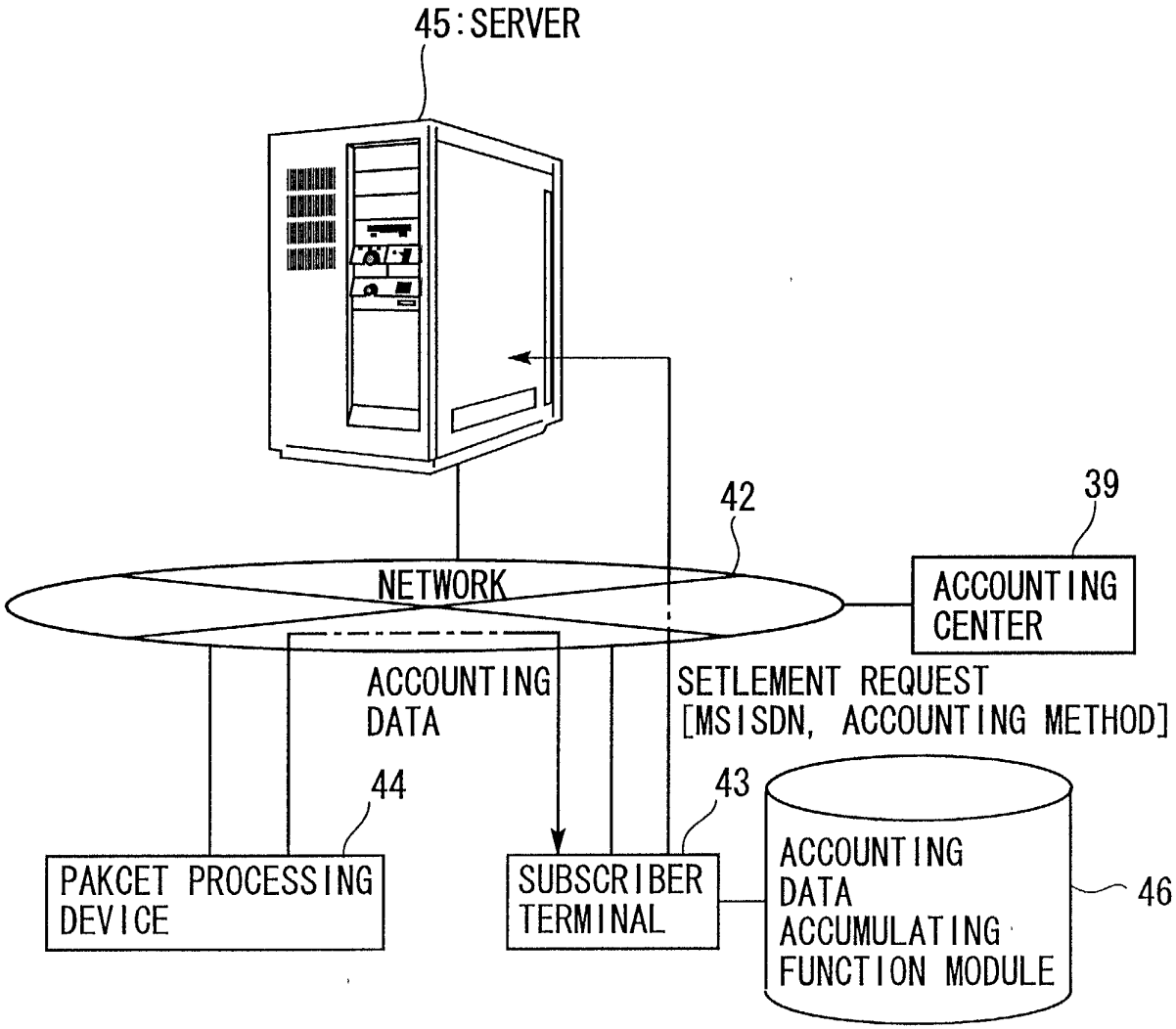
45:SERVER
42
39
NETWORK
ACCOUNTING CENTER
ACCOUNTING DATA
SETLEMENT REQUEST [MSISDN, ACCOUNTING METHOD]
44
43
PAKCET PROCESSING DEVICE
SUBSCRIBER TERMINAL
ACCOUNTING DATA ACCUMULATING FUNCTION MODULE
46

FIG. 34

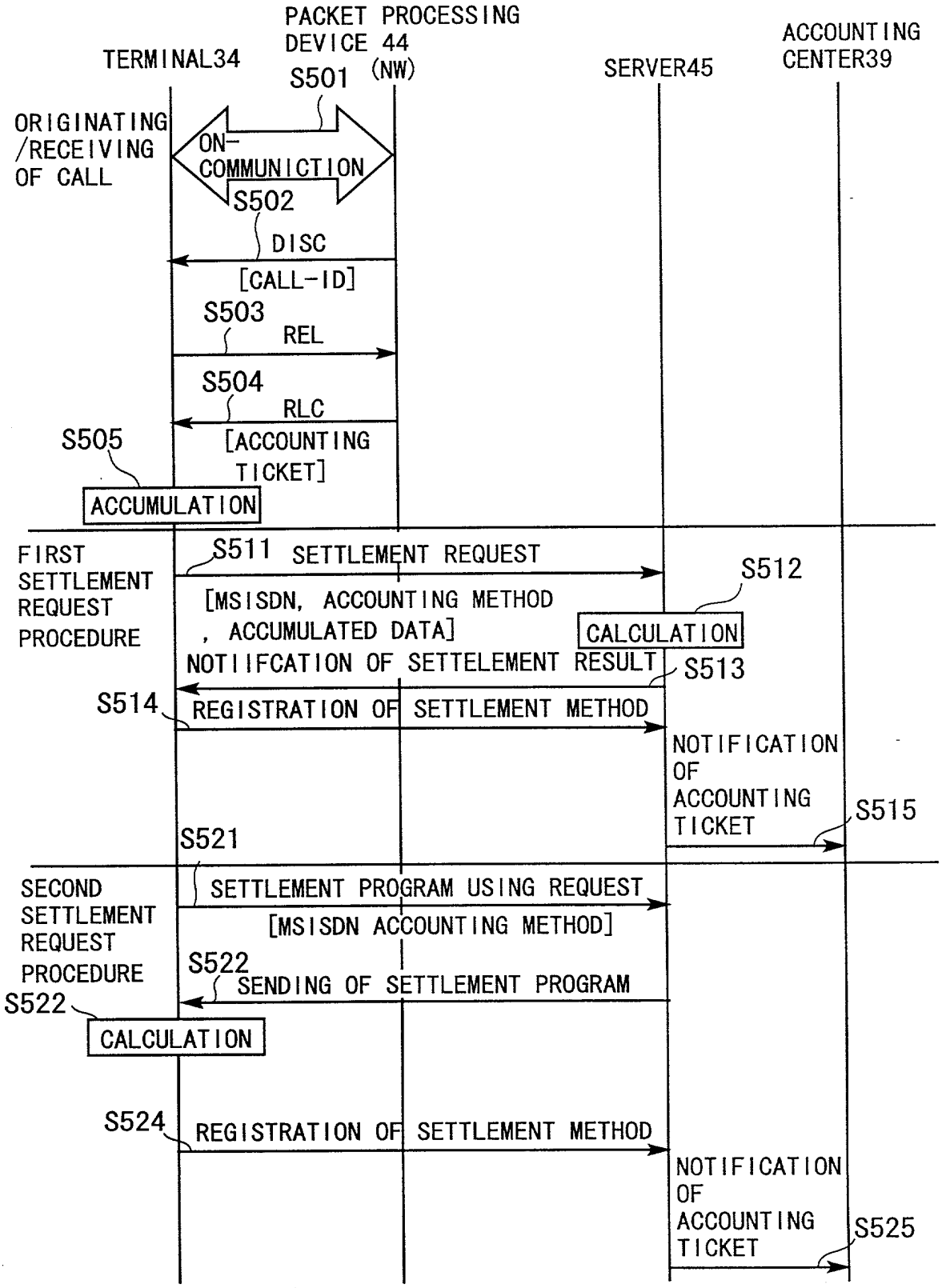

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FIG. 35A

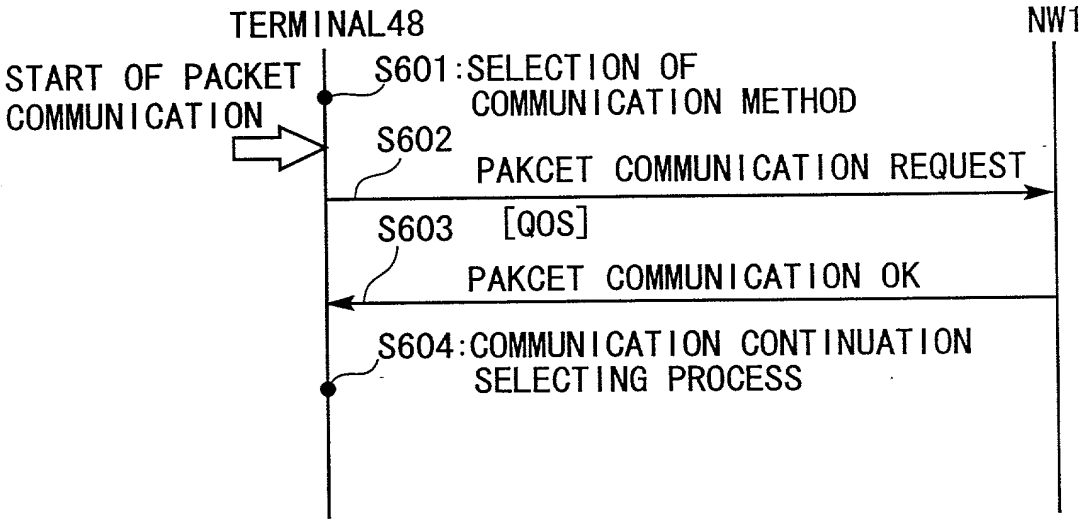

FIG. 35B

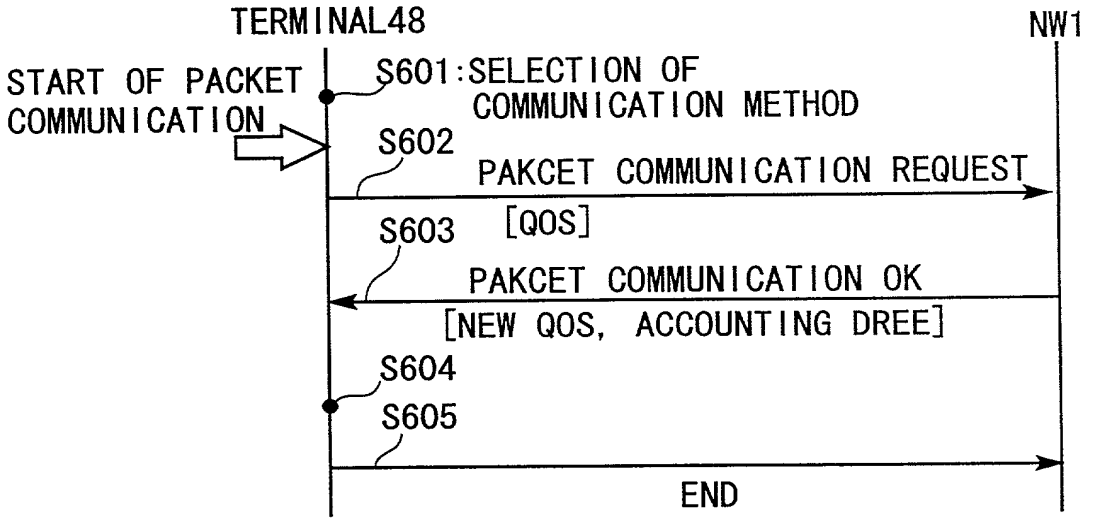

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FIG. 36

COMMUNICAITON METHOD SELECTION SCREEN

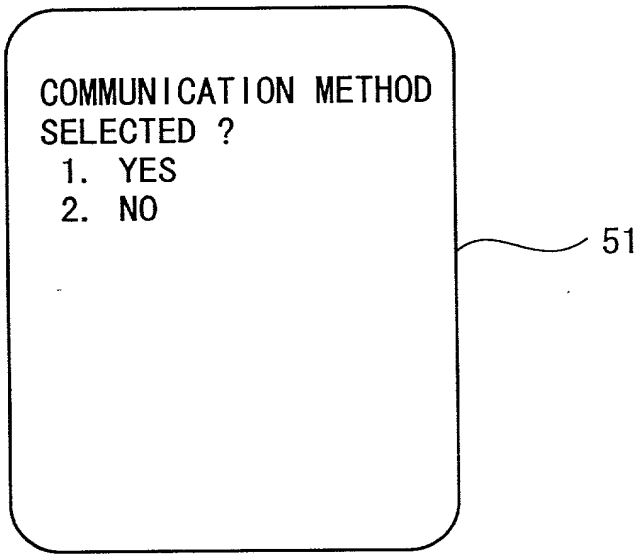


FIG. 37

SERVICE CATEGORY (CALL CATEGORY)
SELECTION SCREEN

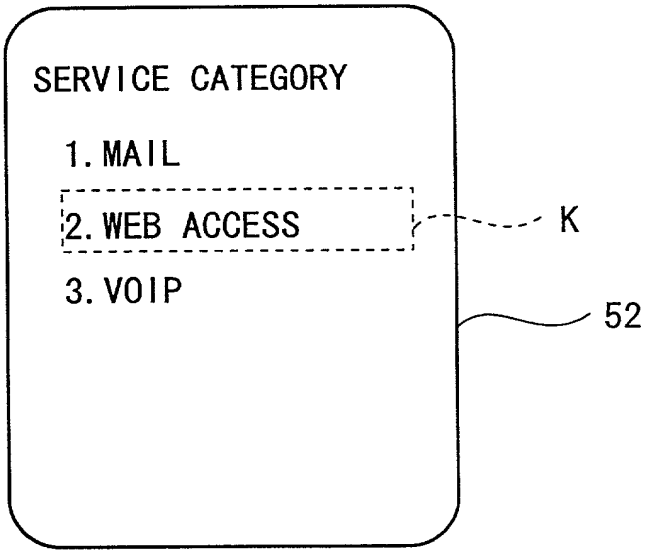


FIG. 38

COMMUNICTION QUANTITY INPUT SCREEN

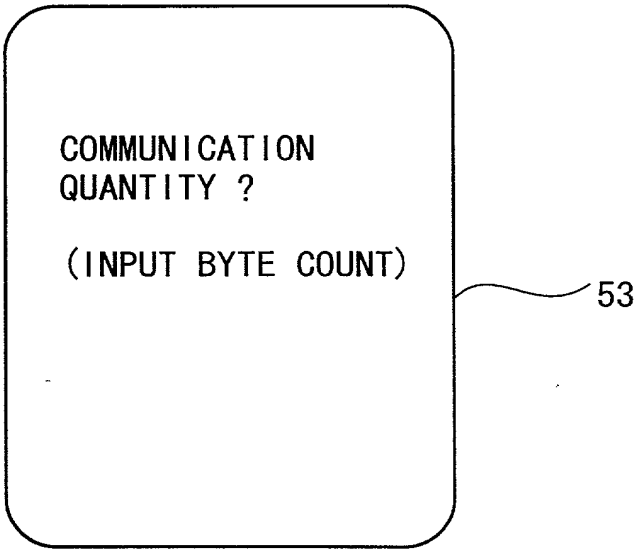


FIG. 39

PARAMETER DETERMINATION SCREEN

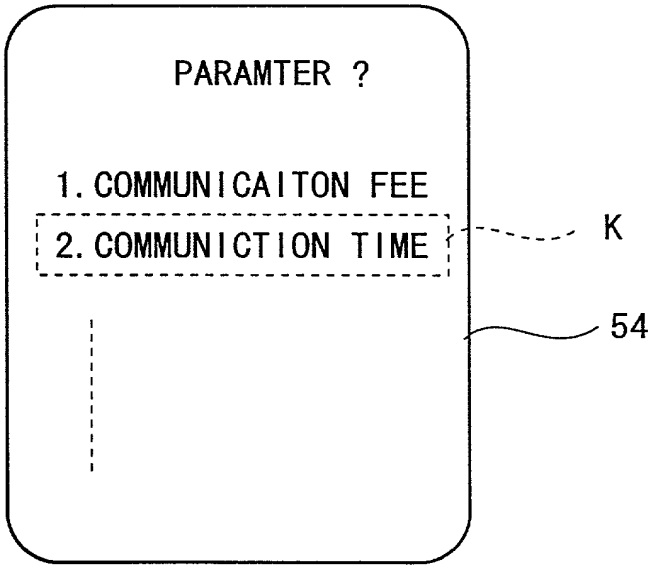


FIG. 40

ON-COMMUNICTION-PROCESS SCREEN

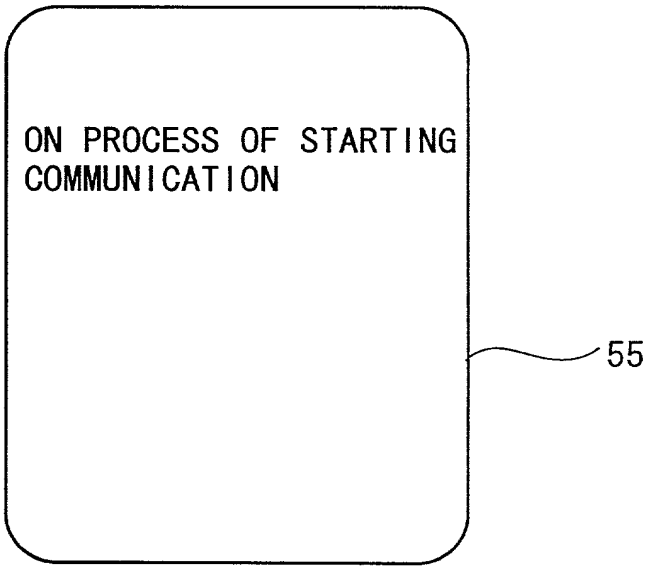
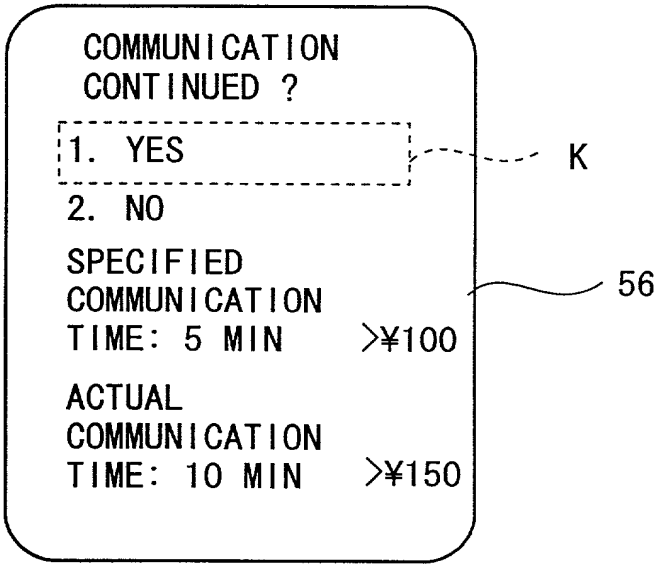


FIG. 41

COMMUNICATION CONTINUATION SELECTION SCREEN